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# Hygeia

## THE HEALTH MAGAZINE

AUGUST

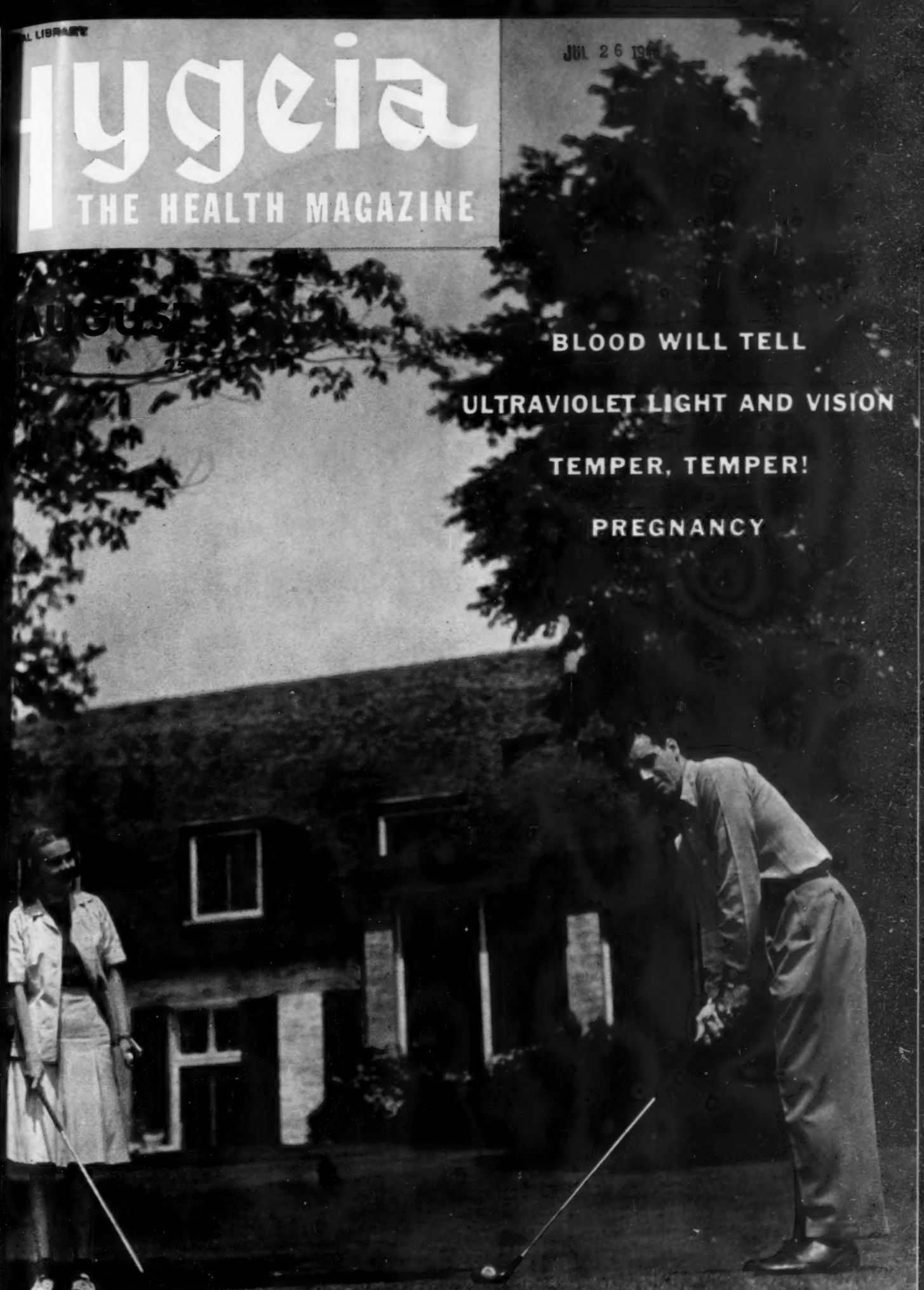
1946 25

BLOOD WILL TELL

ULTRAVIOLET LIGHT AND VISION

TEMPER, TEMPER!

PREGNANCY



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# Hygeia
THE HEALTH MAGAZINE

*Published by the American Medical Association*

535 N. Dearborn St., Chicago 10, Ill.

*Edited by MORRIS FISHBEIN, M.D.*

VOL. 24 **AUGUST 1946** NO. 8


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## WHO'S WHO in Hygeia

### Has Varied Career

E. D. TILLYER, Sc.D., author of the article on ultraviolet light and vision, is research director of the American Optical Company, with which he has been associated since 1916. He is best known, probably, for his invention of the Tillyer ophthalmic lens, which corrects marginal astigmatic and focal errors. He has done outstanding work, not only in optics, but in astronomy, motion pictures, radio and television. Dr. Tillyer's first position after college (he graduated from Rutgers University) was that of computer with the Nautical Almanac Office in Washington, D. C. In 1907 he became an astronomical observer at the Naval Observatory, and four years later entered the Bureau of Standards. While there he redesigned the old types of submarine periscopes and originated standard periscope specifications. He also determined and wrote gunsight specifications for the navy. During both World Wars and while employed by the American Optical Company, he contributed important developments in the fields of military optical instruments and devices. Dr. Tillyer may be considered well qualified to review Dr. Ernst Wolf's fundamental researches into the effects of ultraviolet light on vision—as he does in HYGEIA this month—because Dr. Tillyer invented the ultraviolet absorbing glass used in the manufacture of welding and sun glass lenses.

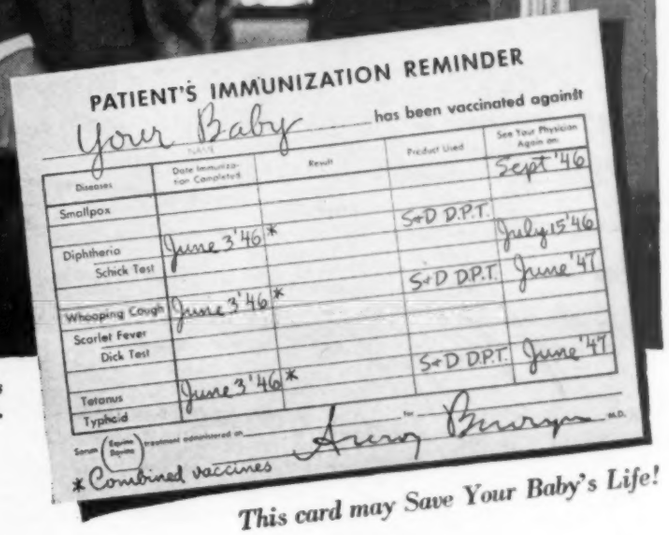
### Served in Navy

E. ALAN LIEBAN, D.D.S., received his professional degree from New York College of Dentistry in 1913. He was formerly director of the department of pulp canal therapy, New York University College of Dentistry, and a postgraduate instructor in the Navy Dental Corps. Dr. Lieban is a fellow of the International College of Dentists and associate editor of *Dental Items of Interest.*

### Likes to Sing

After teaching in the New York City school system for a number of years, ABRAHAM OPPENHEIM, M.D., decided that medicine would be preferable. So he spent four years trailing a snowplow to the University of Vermont Medical School and was eventually rewarded with a medical degree. After interning at Queens

*If your little baby catches whooping cough, he is in grave danger. This disease is one of the major causes of death among babies under one year.*




*This card may Save Your Baby's Life!*

# WHOOPING COUGH
## in infancy often means death

● *Among babies*, whooping cough is fatal in one case out of ten! This terrible disease causes five times as many baby deaths under one year as diphtheria, smallpox, infantile paralysis, measles and scarlet fever *all combined.*

And those babies with whooping cough who do not *die* run the risk of serious after-effects—such as nerve deafness, speech defects or subnormal development. In severe cases there is always the possibility that violent paroxysms of coughing may cause convulsions or hemorrhages.

Don't take chances with *your* baby. If he is three months of age or older—and has not been *immunized* against whooping cough—*consult your doctor.*

Don't delay—because your baby may be exposed to whooping cough at any moment. *The disease is so prevalent and so difficult to recognize in its early stages that health authorities say it is unlikely that any child can escape being exposed.*

*See your doctor immediately.* He will decide whether the baby should be immunized *now.* And for *future* safety, the doctor will give you the *Immunization Record Card.*

***This card tells you when***

With this card, you know *when* to take your child to the doctor for his immunizations, not only against whooping cough, but against *other* preventable diseases.

No busy mother can *possibly* keep track of all this herself. Immunizations against different diseases are given at different ages . . . some diseases require repeated immunizations . . . .safety periods vary!

***Don't trust your memory.*** Join the Mothers' Immunization Reminder Club, which now totals over 3,281,000 members. All you have to do is ask your doctor for the *Immunization Record Card.*

Sharp & Dohme supplies these cards to physicians free upon request. They are in two parts—one for the *doctor's* records and one for *you. Get this card from your doctor today! Keep it where you will see it at least twice a year.*

• • •

**FREE! New immunization booklet.** Gives the facts about contagious diseases your child might get . . . their special danger for babies . . . their harmful after-effects. Find out how to prevent *your* children from catching these diseases.

**Write today** for your **free** copy of this immunization booklet to: Sharp & Dohme, Philadelphia 1, Pa., Dept. H 8-6.

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General Hospital in Jamaica, Dr. Oppenheim worked as a health officer in Louisiana and then in New York's Memorial Hospital for Cancer, where he spent two and a half years. At the present time he is a resident in Surgery at Harlem Hospital in New York. In his spare time he has lectured for the New York City Cancer Committee and has done radio work and research. Dr. Oppenheim says that his hobby is singing and that, consequently, his free evenings are spent at the opera, listening to tenor competition. For his article on "Cancer of the Lung," turn to page 576.

### *Ulcer Results in M.D.*

If it hadn't been for a duodenal ulcer which interrupted a budding career in Wall Street, GEORGE C. ANDREWS, M.D., might never have become a physician. Pain of the ulcer, and the measures taken to relieve that pain, aroused his interest in medicine. As a result, he entered the College of Physicians and Surgeons of Columbia University. When he received his degree in 1910 (graduating at the head of his class), he served his internship at Presbyterian Hospital in New York, and has maintained his connection with that hospital ever since. Dr. Andrews is the author of a textbook on diseases of the skin, three editions of which have been published. His interest in dermatology has led him to do a great deal of research on the application of x-rays and radium in cutaneous diseases, particularly skin cancer, and to establish a clinic devoted to the treatment of birth marks. There, during the past fifteen years, more than two thousand babies with various deforming birth marks have been treated.

In addition to this work, Dr. Andrews is associate clinical professor of dermatology at Columbia's College of Physicians and Surgeons, chief of the clinic of the department of dermatology, Vanderbilt Clinic, attending dermatologists at Presbyterian and Roosevelt Hospitals, and consulting dermatologist and syphilologist to the Tarrytown Hospital. Among his society memberships he lists the American Medical Association, American College of Physicians, New York Academy of Medicine, American Dermatological Association, American Radium Society, New York Dermatological Society, Manhattan Dermatological Society, New York Roentgen Society, and numerous foreign dermatological societies.

### *Former School Teacher*

Now a freelance writer, FRANCES TURNER taught school for two years after her graduation from the University of California and then worked for a time as a laboratory technician and secretary in the department of pathology of Stanford University School of Medicine.

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*Vitamins.* Ice Cream is a good source of Vitamin A and Riboflavin (Vitamin G) and contains other vitamins found in milk.

*Minerals.* Calcium, necessary for strong bones and teeth, is supplied abundantly by Ice Cream.

*Proteins.* Ice Cream provides high-quality proteins . . . those found in milk.

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And remember, the particular combination of nutrients found in Ice Cream is unusual. This is one reason why Ice Cream is accorded such an important role in our national rehabilitation program.

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**NATIONAL DAIRY COUNCIL**

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A non-profit, educational organization promoting national health through a better understanding of dairy foods and their use.

### No Cancer

To the Editor:

I recently became a reader of HYGEIA through a trial subscription, and I found it of such interest and value that I never expect to be without it in the future.

Two articles on cancer in the January and February issues are worth the price many, many times over. They were responsible for my having a thorough check, both for cancer of the colon and cancer of the stomach, with negative findings in each instance. It was discovered, however, that I have spastic colitis. I understand the condition is quite common. I am most anxious to hear what a real authority has to say on this ailment.

P. V. KORS

Independence, Kans.

### Supplementary Text

To the Editor:

For the past three years I have used HYGEIA as a supplementary text in my hygiene class. I generally write a set of exercises for each article, which the student must do for completion of assignment. Most of the issues are well adapted to our work. As it usually takes a week to cover each issue, nine weeks in the school year are spent with HYGEIA. Students enjoy HYGEIA!

Caspian, Mich. S. M. POLICH

### Wishes Hygeia Were a Weekly

To the Editor:

I would like to take this opportunity of expressing my appreciation for your publishing HYGEIA, The Health Magazine. I would be lost without it. Being a thirteen year old girl, I find it easy to comprehend the articles on medicine that you publish. I am interested in medicine and hope to become a doctor if circumstances permit. I like HYGEIA so much that I often wish it would come weekly instead of monthly.

I hope some people who are interested in medicine write to me. I live in Hawaii, so that would make correspondence more interesting.

JANIE HIRAKAWA

P.O.Box 23, Port Allen
Elule, Kauai, T. H.

### Constructive Writing

To the Editor:

"Adding Life to Our Years," by Dr. Thurman B. Rice, is a welcome addition to the May HYGEIA. There is something sound and, consequently, constructive, in that type of writing.

MABLE K. STABLER

Indianapolis 5, Ind.

### Informative and Interesting

To the Editor:

I subscribed to HYGEIA on your trial offer and I expect to continue my subscription when the eight months are up. Your magazine is informative and one of the few that I am sufficiently interested in to read in my limited time.

Sequim, Wash. MRS. HARRY SECOR

### We Want . . .

. . . more articles on occupational therapy. Several of us who are registered therapists take HYGEIA.

MINNIE WITHAM

. . . an article on marginal line cavities some time in the future. I would like to know what causes them.

M. KUENZIG

. . . an article on troubles of the feet and the way they tire when one is standing all day. The toes and soles become callused, and so forth, and seem to cause irritability of the entire nervous system.

MAE ROCEN

NOTE.—*We'll see what we can do about the first two requests, and refer Mrs. Rocen to the May 1946 issue of* HYGEIA, *page 358.*—ED.

## NEW BABY PRODUCTS

An infant development mat, a combined bathmat and progress check chart, is now on the market. As the mother changes or dries the baby on the mat, the hows and whys are discussed and illustrated literally right before her eyes. In baby blue and pink, the mat is washable, waterproof and uric acid resistant and will not irritate the baby's skin, the maker states. Space is provided for the mother to jot down vital statistics about her "pride and joy" at stated intervals.

Another new item in the baby equipment department is a plastic glazing, planned to be attached to the play pen to protect the child from dust and dirt, stray animals and drafts. It makes it possible for the child to have extra hours of sunshine and fresh air on days when it may be a little too windy for the ordinary play pen.

Easily attached to baby's pen, the plastic glazing is light and transparent, allowing mother to see her youngster at a glance. The shiny surface may be quickly cleaned with a damp cloth. Crisp and clean in appearance, this tough, durable, reinforced film provides protection against drafts, keeps toys inside and prevents baby from picking up stones or dirt through the vertical wooden bars.

For hospital care of infants, a transparent portable crib has been made entirely of lucite acrylic resin. The crib is designed to give the attendant an unobstructed view of the baby through the crystal clear sides and to aid in maintaining aseptic cleanliness. Formed from a single thick sheet of the plastic, it eliminates seams, metal supports and reinforcements which interfere with the view and collect dust. Rounded corners, sides and bottom facilitate cleaning. Because lucite is virtually unbreakable, the crib is expected to give long service. Light in weight, it may be easily carried by built-in handles.

## NEW SHOE FACTS

New inventions have come to the aid of America's shoe manufacturers who have been facing partial or complete shutdowns because of a lack of leather.

Some of these inventions include soles made of soybeans cannot be told from leather. They outwear present day leather three or four to one.

Crepe soles made from synthetic rubber possess greater wearing qualities than crepe made on the plantations in the Far East.

Walk-On-Air soles made for the first time in history of compressed sponge rubber in all colors provide a platform and sole and eliminate binding material.

These are but some of the revolutionizing shoe facts presented by Elliot E. Simpson, inventor at the Shoe Manufacturer's opening.


Blood Pressure, like steam pressure in a boiler, goes up and down, so don't worry if yours is temporarily high, particularly during periods of stress. However, if it frequently gets *above normal, or stays there,* the heart must work harder and ultimately may be impaired. The blood vessels are also put under greater strain which may affect other organs.

When caught in time, high blood pressure may be controlled or possibly eliminated.

If an elevation of the blood pressure develops, periodic medical examinations will detect it in the early stages and permit your doctor to advise measures which may keep it in check.

Medical scientists are continuing to study new methods to combat high blood pressure. Some authorities believe the kidneys play a vital part in certain high blood pressure cases and that these patients may be helped through special diets and limitation of liquids. New surgical techniques at times have proved effective for selected cases. Psychotherapy is another method under consideration. There also is hope that new drugs may be developed which will be helpful.

One hundred and forty eight life insurance companies have formed the Life Insurance Medical Research Fund. This is making grants to help finance research projects relating to diseases of the heart and blood vessels, including high blood pressure.

*To learn more about high blood pressure, its effect upon your heart, and how to guard against it, send for Metropolitan's free booklet 86Z, "Protecting Your Heart."*

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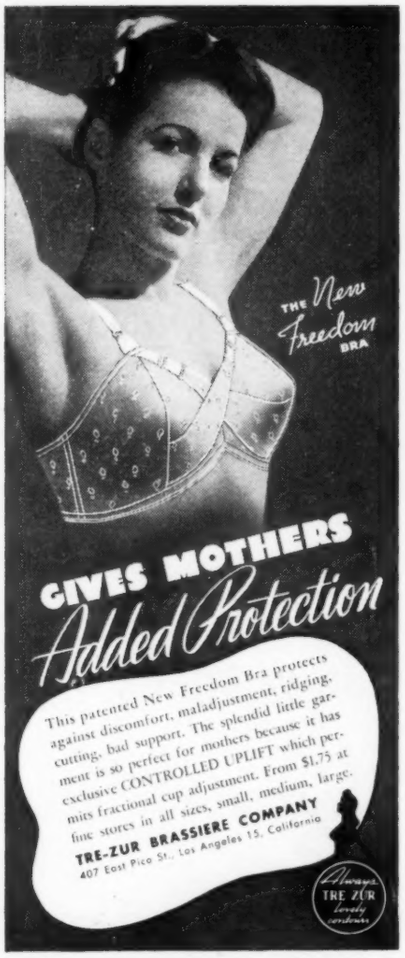
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# Coming in HYGEIA!

## HIGH BLOOD PRESSURE

***By Irvine H. Page, M.D., and A. C. Corcoran, M.D.***

Since high blood pressure, or hypertension, is a condition that affects an extremely large number of our friends and relatives, it is well to know a few facts about what causes it, how it may be treated and what dangers it entails. In this highly readable article, Doctors Page and Corcoran offer some interesting information on the aspects of high blood pressure.

## SAFE WATER FOR THE AMERICAS

***By Clarence I. Sterling Jr.***

One of the many ways in which the good neighbor policy has been promoted has been through joint attention by the United States and its Latin American neighbors to hemisphere health. One of the basic foundations for good health is safe drinking water. Mr. Sterling, of the Institute of Inter-American Affairs, describes in HYGEIA some of the methods which have been used to assure a safe water supply in many previously unguarded areas.

## CHILDREN'S HEADACHES

***By Alton Goldbloom, M.D.***

A headache is always a symptom. When children complain of headaches it is a warning to their parents that something is wrong. A headache may be a symptom of many disorders, some of them having little or no apparent connection with the head. It should be accepted as a warning, and acted on accordingly.

## PULMONARY TUBERCULOSIS SURGERY

***By Louis Carp, M.D.***

Treatment of pulmonary tuberculosis by surgery is a fairly new method which has proved of great value. Victims of tuberculosis, once doomed to death, may now look forward to cure and years of useful life. Surgery is one of the treatment technics which justifies this optimistic expectancy.

## KNOW YOUR LOCAL HEALTH DEPARTMENT

***By Martha Luginbuhl***

The greatest purpose of a health department is to prevent illness. A good health department should see that communicable disease is controlled by the many means known to modern science. It should ascertain that every baby has a good start in life by caring for the baby and its mother before and after birth. In many cases local health departments fail to perform these functions (and others) which we have a right to expect from them. Why this occurs, and what public health authorities say may be done about it, is the subject of Miss Luginbuhl's article in the September HYGEIA.

You're cut out!

Living in a shadowy world of half-familiar faces and places, half-read books, half-thrilling sports, half-successful jobs...

Stumbling and fumbling . . . squinting and *straining-to-see*—instead of seeing with wonderful ease . . .

You live in an unreal world when you live with poor vision. Everywhere you go, whatever you do and see—you're only *making believe* . . .

There's a better, more exciting and colorful world of new joys, new adventures—the bright, clear, fun-filled world you see through keen, comfortable eyes!

***Have your eyes examined now*—and stop**

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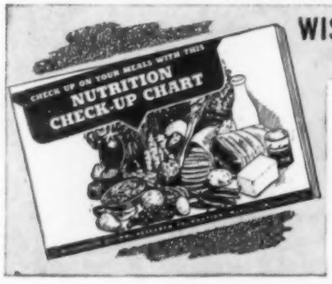


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## FUTURE OF NEW DRUGS

Dr. Selman A. Waksman, the university professor who discovered the wonder drug, streptomycin, predicted recently in an address before the George Westinghouse Centennial Forum that the time is near when diseases like the common cold, infantile paralysis and tuberculosis will be brought under practical control through the enlargement of medical knowledge and the development of new drugs.

Within a period of only five years, we have witnessed the development of radically new methods of treating a variety of diseases in man and in animals. The possibilities are just being explored and there is promise of greater things in the future, notably in finding agents to combat many of the viruses.

To discover this knowledge studies are being made of microscopic life forms that we commonly refer to as microbes. Not long ago man was at the complete mercy of the microbes. Pestilence and epidemics have influenced history in greater ways than have battles. The progress of man was often changed or delayed by the harmful effects of microbes, which may have caused crop destruction with resulting hunger and starvation, or been responsible for outbreaks of epidemics, such as bubonic or black plague and cholera.

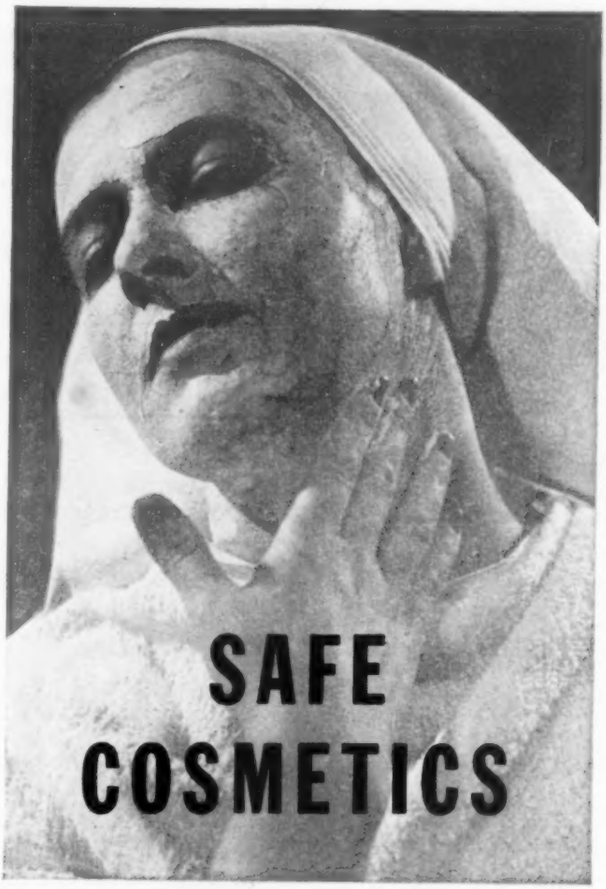
Although influenza and the common cold, poliomyelitis and rheumatic fever, tuberculosis and undulant fever are still rampant or may become so under certain conditions, the time is near when these scourges, as well, will be brought under practical control.

Chemotherapy, or the treatment of diseases with chemical agents, beginning with the use of salvarsan, the introduction of the sulfa drugs and finally the application of antibiotics, is only at the threshold of a great epoch in human history that will no doubt prove of the greatest usefulness in combating various diseases caused.

# SAFE COSMETICS

*An Editorial by* ***MORRIS FISHBEIN***

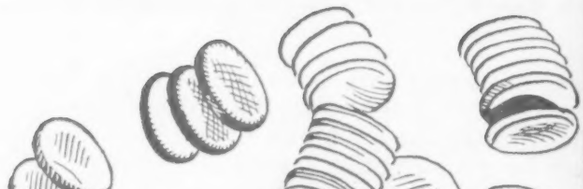
THE growth of the cosmetic industry has been one of the amazing phenomena of life in the United States during the present decade. While accurate statistics are not available as to the war years, it is easily apparent that an industry which formerly was counted in the millions is now definitely well over a billion dollars annually. The rice powder and toilet water of a previous generation have given place to an armamentarium of decorative facilities which make the top of the dressing table of the average woman rival the total equipment of many a small drug store. The varieties of powders, rouges, hair dressings, mascaras, toilet waters, nail polishes, hair dyes, hair curlers, hair stimulants and similar materials are bewildering. The number of manufacturers increases by leaps and bounds because the total investment required for embarkation in any single phase of the industry is not great, the majority of the expenditure going into advertising and promotion.



The introduction of many new chemical substances into the various preparations that are placed on the surface of the body to change if not to improve its appearance has brought to the attention of physicians many cases of sensitivity to such substances with reactions varying from eruptions and inflammations to cases of constitutional disturbances including anemia and damage to the liver and other organs.

Most recent to attract public attention is a report by a New York physician of a number of cases of poisoning and sensitivity reactions among hair dressers and other women to using a process for creating a permanent wave known as the cold wave process. The technic involves the use of a substance called thioglycolic acid which is neutralized in most instances by the use of ammonia. The essential steps in the process are as follows according to a technical report on the subject: The hair is first washed thoroughly with a detergent solution to remove any oils or fatty substances which would tend to stop the softening process. The hair to be waved is then wound on pegs where it is held in place by little clamps. Then the hair is treated with the cold wave material which tends to break up the protein substances in the hair and to permit the fiber to be bent into a shape desired by the hair dresser. Sometimes the hair dresser will test the solution on a sample of hair to determine how long the solution must act before the action is stopped. When the hair has been softened sufficiently, it is treated with the material which establishes the new formation, then the hair is unwound from the pegs and washed thoroughly. The thioglycolic acid which is the chief material used to change the proteins of the hair has as a by product hydrogen sulfide which is a toxic substance and one to which many people may be sensitive. Also the New York physician found that women who had previously used hydrogen sulfide as a depilatory were more likely to react severely when subjected to the cold wave process.

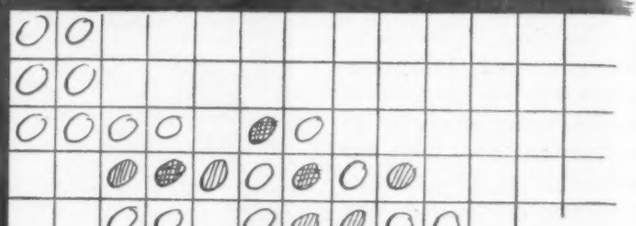
The many reports that are appearing in medical writings about sensitivity to the ingredients of nail polishes, rouges, up sweep hairdo lacquers, varnishes, cold wave materials and similar substances indicate that manufacturers in these fields ought to do much more preliminary experimentation than they have been accustomed to doing in the past if the women who use these substances are to be guaranteed freedom from harm. Attention should be given especially to the strength of the various solutions because it is known that one concentration of a toxic material may be poisonous whereas another may be harmless. When drugs are taken into the interior of the body doctors investigate carefully the dosages of the materials concerned, the length of time the drug remains in the body, the frequency the drug is taken, the ability of the body to eliminate the poisoning and many similar factors. Cosmetic industry workers and beauty shop employees are subject to risks as they are in contact with these materials. It is time that there be public recognition of the fact that as much careful evidence needs to be accumulated regarding the safety of substances placed on the surface of the body as is required regarding substances taken into the interior of the human system.



Blood cells appear as tiny, round disks

Thirty-two hundred cells make an inch line

Dyes distinguish the various white cells



A ruled square aids in counting the cells

# BLOOD

**By JANE SHEPPARD**

YOU are in the hospital. You've been feeling rather "seedy" lately, and your doctor sent you there for a rest and general check-up. You expected to be put into a dark, quiet room; to have your pulse and temperature taken occasionally; to be bathed, fed and otherwise left in peace. You hoped the doctor could diagnose your ailment by looking at your tongue or listening to your heart. But diagnosis of physical ills is not an easy and comfortable undertaking for either you or your doctor. He may be able to learn a great deal about your condition from discussing your symptoms and by poking and pounding your anatomy, but before he can determine your trouble he has to know how your body is functioning down to the tiniest blood cell. Here is where clinical laboratory tests come in, for they tell the doctor a great deal about the innermost workings of your wonderfully intricate body.

Of the clinical tests routinely performed in a hospital, blood tests are probably the most numerous, interesting and valuable. Patients don't always enjoy contributing their blood for these tests — pesky hypodermic needles and blood lancets are a trial to the flesh—but they are always curious as to what will be done with their blood once it reaches the laboratory. Unfortunately, the technician seldom has time to explain the technic of blood tests to each individual patient. In many cases the patient might be alarmed at the prospect of having some blood disorder. But now you are in the hospital. You are one of my best patients and have given generously of your blood. I don't want you to feel that you have bled either in vain or in ignorance, so let's consider the things your blood will tell us.

First thing the doctor wants to know is how many red and white cells are coursing through your veins. For this determination, a few drops of blood from your ear lobe or finger will suffice.

We'd like to know if you have sufficient red blood cells to carry oxygen to all parts of your body and enough white cells to help your body fight infections. Blood cells cannot be counted by pouring some blood into a saucer and seeking around in it for separate cells. Not only are blood cells as numerous as the stars—there being some five million of them in one cubic millimeter (about one three hundredth of an ounce) of blood—but they are microscopic in size; you would need to line up thirty-two hundred if you wished to make a line an inch long. It seems a hopeless task to count them, doesn't it?

Actually, it can be done with a high degree of accuracy. A measured amount of blood is drawn up into a specially designed tube and mixed with a measured amount of diluting fluid. A drop of this mixture is placed in a tiny chamber on a glass slide. In the center of the chamber is a finely ruled set of squares that are not visible to the naked eye but that are clear under the microscope. The blood cells appear as tiny round disks spread generously over the ruled area. The number of cells in each square is counted, and knowing the dilution of the blood and the depth and area of the ruled chamber, you can calculate the cells in a cubic millimeter of undiluted blood.

Your red count turns out to be normal. I wish all of your hospital neighbors had as many of those precious red cells as you have. Many of them have low counts due to pernicious anemia or because they have lost blood in severe

# *will tell*

hemorrhages. Others are taking drugs belonging to the sulfanilamide group. Mr. Arnold, in room sixteen, belongs to that small class of people whose red count is mysteriously reduced by these drugs. His blood count has been falling steadily, and the doctor has ordered the drug discontinued. On the third floor we have obstetrical cases. Three new mothers are going home today, and I must check their blood counts to make sure that giving a life has not taken too much of their own life blood. On the fourth floor, we have two patients who recently underwent major operations. They lost a great deal of blood, and we want to know if they lost enough red cells to warrant a transfusion.

While we're checking your red cells we will also try a test to find out if those cells are carrying their full quota of hemoglobin, the chemical compound that gives blood its crimson color and that makes it possible for the red cells to unite with the oxygen of the air. There are many ways of measuring the hemoglobin in the blood, but most of them consist in matching either whole blood or chemically modified blood with a color standard which reads a different percentage of hemoglobin for each color in the scale. Your hemoglobin per cent was up to par, so now we have further evidence that you are not suffering from anemia or internal bleeding.

A white cell count is made in much the same way as an enumeration of red cells. Whereas the red cells remain fairly constant over a long period of time, the white count varies slightly at different times of the day. Normally there are from seven to ten thousand of them per cubic millimeter. Their function is to help the body ward off infections, either by gobbling up the invading bacteria or by producing some chemical substance which renders them harmless. Your white count turns out to be eight thousand and fifty so the doctor can be reasonably sure you have no source of hidden infection. The white count may shoot up to twenty thousand in cases of appendicitis, pneumonia, scarlet fever, diphtheria, meningitis, or any illness where an inflammatory process exists.

I'm glad you aren't going to be an appendix case for then you would really keep me busy. The doctor would want an hourly report of your white count to see how fast the inflammation was spreading and how well your body was resisting the infection. He would be on the phone asking for hourly quotations like a stock broker when the market runs wild. If your count steadily increased, he would know that your old appendix was really bad, but he would also know that your white cells were working and ready to fight. Last night we had a really bad appendix case. Tom Jones was white and wailing when frantic relatives finally brought him in from the farm. I dashed up to the waiting room and took his count while the nurses were getting a room ready. He had the clinical symptoms of a severe infection, but his count was not unusually high. That was a bad sign: it meant his white cells were not on the job. The doctor operated pronto, and that appendix was green and growling. It will take Tom a long time to recover for his resistance is poor.

Your normal white count also tells us that you are not a victim of that strange, invariably fatal blood disease known as leukemia. Something is wrong with the blood-making organs and the white cells may increase to as much as one hundred times their normal number. Cases of it are fairly rare, but last week they brought in a high school boy with an advanced leukemia. We all felt sorry for him. He didn't realize he was going to die, but the doctors and nurses did. They all felt so helpless knowing that nothing they could *(Continued on page 628)*

# Cancer of the Lung

By

**ABRAHAM OPPENHEIM**

## CANCER CAN BE CURED

CANCER can be cured, particularly in the early stages. This information is now almost commonplace, yet ten years ago it was not true of cancer of the lung. Up to that time cancer of the lung resisted all efforts at cure, even when diagnosed in its early stages. Within the past ten years the picture has changed; early cancer of the lung may be cured, and it therefore becomes imperative that these cancers should not be overlooked.

One of the major types of cancer is cancer of the lung. It forms about 5 per cent of all cancers, and it is apparently on the increase. This increase may be due to the fact that the doctor is becoming more aware of this type of cancer and that the disease is more prevalent now than it was some years ago.

## WHAT CAUSES CANCER OF THE LUNG?

Many theories have been suggested regarding the cause of cancer of the lung. The number of theories have kept pace with the increase in the cases. What are some of these theories? That chronic inflammation following influenza may cause cancer of the lung; that dust may be responsible; that the inhalation of certain exhausts from automobiles may be the factor. But to date, not one of these has been either proved or disproved. A suspicion that some unknown chemical cancer producing agent may be involved is held by a few people, but no definite proof is available. Heredity, so prominent in experimental studies with animals which have cancer of the lung, has not been traced in human subjects.

The truth of the matter is that we do not know the cause of cancer of the lung. Cancers of the lung which seem to stem from a known cause are those developing in miners in certain regions of Saxony, Germany, where a combination of arsenic and radium emanation in the dust of the mines, and the local mechanical irritation of the inhaled sharp dust particles seems to be the cause.

## WHAT IS CANCER OF THE LUNG?

Cancer of the lung is widely distributed over all ages. It occurs chiefly in people between the ages of 40 and 60, and most often in men—83 per cent of the cases are in men.

It is known that cancer elsewhere in the body may travel to the lung, but I shall omit the type that affects the lung secondarily and treat only primary cancers of the lung—that is, cancers starting in the lung itself.

We may compare the lung with its connections to a tree with its component parts. The windpipe, also called the trachea, may be compared to the trunk of the tree; the subdivisions called bronchi, given off by the windpipe, may be compared to the branches of the tree; the finer subdivisions called bronchioles given off

by the bronchi are like the twigs of the tree; the alveoli or airsacs at the ends of the bronchioles, or twigs, may be compared to the leaves. These airsacs comprise the major portion of the lung. Of course, blood vessels and nerves are all interspersed. Blood, lymph and air circulate through all these parts.

Lung cancer may arise in any portion of the areas I have described, but the most frequent type is that which arises from the large or small bronchi. Growth of the cancer takes various forms. It may grow and develop at the point of origin without spreading further. It may grow from the point of origin, or it may break through the bronchial wall and grow into all the tissues around. In addition, cancer of the lung may be spread by the blood stream so that other organs may be affected. This is in keeping with the general principle which is true for all types of cancers—that a growth in one part of the body may spread to any other part.

## WHAT ARE THE SYMPTOMS?

As the cancer begins to press on the opening of the bronchi, the passage of air over the projecting tumor during breathing produces a

wheezing sound which can be heard with a stethoscope placed over the affected lung. The patient may suffer from shortness of breath. This occurs because passage of air is interfered with when the openings are stopped or closed by the growth. This is especially noticeable if the passage affected is the main branch or bronchi.

The growth may cause an irritative cough and early in the disease pus may be found in the sputum. If the tumor tissue is sufficiently broken down it may result in the appearance of blood streaks in the sputum or in the actual spitting of blood. Thus the symptoms of wheezing, shortness of breath and coughing with or without pus or blood in the sputum, are the common signs of cancer of the lung. Hoarseness, pain, fever, loss of weight are less obvious symptoms, but they may occur.

Many of these symptoms also occur in bronchitis, tuberculosis, asthma, pneumonia and other lung conditions but they must be carefully differentiated. If these symptoms persist beyond a reasonable time, as determined by your physician, a thorough examination should be made.

Diagnosis of cancer of the lung is based upon careful interpretation of symptoms, upon physical examination and upon x-ray findings. Examination with a bronchoscope, an instrument which is passed down the windpipe and enables the physician to see the tumor directly if one is present, may also be necessary.

Of course, many times these methods are not feasible or conclusive, and in such cases an operation may be necessary to rule out the possibility of cancer. One of the most frequent and tragic faults leading to failure to make an early diagnosis is that cancer is not even thought of when symptoms that may have originally suggested a less dangerous disease of the lung (such as asthma, bronchitis, pneumonia) do not conform to the typical picture for those diseases. To some extent this fault of overlooking the possibility of a lung cancer is being remedied, as is apparent by the increased number of diagnoses.

Although some cures have been reported with the use of x-rays, complete surgical removal of the cancer remains the best method of treatment for cancer of the lung. In other types of cancer, surgery, x-ray or radium, either alone or in combination, may effect cures. If a cancer of the lung has existed long enough to invade the areas around it, or has spread to other parts of the body, complete surgical removal of all cancer cells is obviously impossible. Poor general condition of the patient and other factors which would make surgery too hazardous may necessitate x-ray therapy as a measure designed to make the patient more comfortable, although a cure cannot be expected.

Successful surgical treatment of lung cancer is a development of the past ten years. Before this, early diagnosis did not benefit the patient. Now that we know we can effect some cures through surgery, it is of the greatest importance that we discover cancers of the lung early. At present, scarcely 10 per cent of lung cancers are first seen by a surgeon in a removable stage. Early cases are as yet too rarely diagnosed and operated on.

Let me summarize the facts about cancer of the lung. The cause is as yet unknown. It affects men more frequently than it does women, and occurs most often between the ages of 40 and 60. Symptoms are likely to be wheezing, shortness of breath and coughing, with or without blood or pus in the sputum.

Diagnosis can be made only by a competent physician, who will interpret the patient's symptoms with the aid of x-rays and the bronchoscope. Cure can be effected in the early stages by surgical removal. Deep x-ray therapy temporarily reduces the size of the lung tumors and relieves troublesome symptoms where surgery is not possible.

Early cancer of any type is curable, including cancer of the lung. Since curative agents in cancer of the lung are limited it is doubly important that it be diagnosed early. It is only by a concerted effort on the part of the physician and the patient alike that early diagnosis can be made.

**A large country house, thirty miles from London, is the location of England's first Industrial Rehabilitation Center**

# Rehabilitation

**By THOMAS LING**

REHABILITATION as understood today is a form of scientific treatment which should be a part of medical therapy of all illnesses. The better and earlier the treatment the fewer will be the cases of permanent disability which will require vocational training, and the more satisfactory the results in those so trained.

In Britain during World War II, there were bigger developments in the Forces than in civilian life, but the discrepancy is rapidly becoming less marked.

In order to deal with some of these industrial problems the first Industrial Rehabilitation Center for neurosis cases, was established in 1943, under the chairmanship of Lord Horder, Physician to the King, and maintained by the generosity of a number of leading employers in the country. A sum of approximately $300,000 was subscribed from industry, and a large country house, thirty miles from London in Horsham, Sussex, was purchased. Contributing firms include well-known names on both sides of the Atlantic.

The Center provides residential facilities for one hundred and ten patients of both sexes between the ages of 18 and 50 years. Priority of admission is given to employees of subscribing firms although admission is not limited to patients from such sources.

Each patient is given a thorough examination and psychiatric interview together with appropriate intelligence and aptitude tests. The patient is also interviewed by the social worker, who has had wide industrial experience.

Emphasis is placed on the treatment of each case with physical, occupational and psychologic features receiving due attention. Occupations for men consist of engineering workshops, woodwork, wood-sawing and gardening. Women's occupations consist of domestic work, needlework classes, gardening, art classes, assisting in the nursery (established on the premises for children of the staff) and training in elementary dietetics. Unless there are medical contraindications, each patient carries out a daily graded course of physical training.

Three resident psychiatrists and visiting spe-

cialists are available. Patients are seen by the doctor in charge at least twice a week and more often if necessary. Problems in the patient's life are discussed and help is given toward eradicating them. In some instances difficulties have arisen at work, in others at home. In others the problems may be of a more deep-seated nature. A full understanding of the patient's working background is essential, and close contact is kept with the office or factory from which the patient has been sent.

Each evening a communal activity, including discussion groups, gramophone recitals, amateur theatricals, motion picture shows and dances, is arranged for the patients.

Patients remain for an average period of six weeks. Before discharge careful attention is given to subsequent placement at work. Majority of the patients are able to return to their normal employment, but some present a problem in placement. To help in this work, Britain's Ministry of Labor officials visit the Center each week. In all instances a full report is sent to the doctor who referred the patient

## of British Industry's Neurosis Cases

and to the industrial medical officer of the employing firm.

During one twelve month period 580 men and 460 women have been treated with satisfactory results. Many of the cases were medically and psychiatrically difficult and a minority were complicated by insoluble social problems. It is often difficult to classify the cases exactly, but the greater number were suffering from occupational and social maladjustments. Typical case histories were:

CASE 1.—Miss S., aged 20, employed as a secretary in outer London, was referred by the company medical officer because of pains in the hands, feet and back, and insomnia. History of the present illness showed that the patient had felt tired, irritated and depressed for eighteen months and that this condition had been aggravated by air raids. There were also marked difficulties in her home life.

While in the Center, the patient was given remedial exercises, graded occupational therapy, and was helped to understand the psychological origin of her symptoms. Her condition improved considerably and on discharge she was free from pain. Arrangements were made with the company for her to work away from home and six months later she reported that she was well and working happily.

CASE 2.—Senior administrative staff member aged 46, in an electrical engineering firm. Admitted complaining of tiredness, irritability, mild depression and loss of weight. His employers valued his service highly, but for some months he had been getting progressively less competent until, a few weeks previously he had collapsed completely. Following a course of narcosis with subsequent physical training, occupational therapy and psychotherapy, the patient had regained his normal weight and was able to sleep normally. His mental state improved and this was helped by his selection by his fellow patients as chairman of their committee. This enabled him to utilize his experience in handling people and restored his confidence. On discharge he was fit for full-time employment in his firm. Excellent reports of his condition were received from his employers six months later.

Roffey Park has proved a first-class success, and one hundred and ten beds are now inadequate for the size of the problem. It is hoped that industry will sponsor additional centers in the future and, ideally, there should be at least one such hospital outside each big city, linked up with the main industries of the district.

Industrial medical officers and personnel managers are anxious to know more about these problems in social psychiatry, and many have been impressed with the great progress made in the Armed Forces on both sides of the Atlantic. These and kindred subjects predicate wide research in the field common to industry and medicine and it is anticipated that future development at Roffey Park will contribute substantially to these problems.

During this year a resident training school with accommodations for 30 trainees is to be established for the benefit of industrial medical and lay personnel who will be drawn from the one hundred and fifty firms sponsoring the project. The course will last about two weeks and full use will be made of the findings of the cases under treatment in the Center. At the same time a research department is to be established to investigate the multiple causes of breakdown in industry. This will throw a great deal of light on current industrial morale.

It is hoped that American industry will establish a similar model Center which will subsequently be copied in other parts of the country. The interchange of knowledge would be a valuable contribution to industrial harmony in both countries.

**A few pups made possible the survival and recovery of thousands of our wounded. They worked—some of them died—in secrecy**

# Operation X—Survival

**By ALBERT Q. MAISEL**

NEARLY every schoolboy today knows that ten thousand heroic war dogs of the K-9 Corps saved the lives of many hundreds of soldiers and marines.

But only a tiny group of medical research workers—the men of the surprisingly secret "Operation X"—know the story of a few pups who made possible the survival and recovery of thousands of our wounded.

These dogs never reached the battlefields. No press-relations-officers sang their praises. Photographers never penetrated their infinitely well guarded kennels. They worked—some of them died—in a blackout of secrecy.

The secrecy that surrounded this animal experimentation work of the armed forces was not designed to conceal facts from the enemy. It was needed to protect a great lifesaving project from the wrath of wealthy and well organized American antivivisectionists.

Consider the case of Marine Private Robert L. Hall, who was carried off Okinawa with a jagged chunk of shrapnel in his brain. Across the Pacific and in three hospitals in the States, surgeons fought to save his life. Yet when he reached a Washington hospital he was rapidly approaching death from meningitis and brain abscesses. Again he went on the operating table and again his skull was reopened.

But this time the surgeons did something new. They not only cut away the infected tissue but they also shot massive doses of penicillin into Hall's spinal canal where it could quickly penetrate to the wounded brain. Within a few hours Hall came out of his coma; ceased his rapid, deathrattle gasping. In four days his temperature dropped from 105.5 degrees to normal. He is a well man today. Yet he—and hundreds of other wounded—could hardly have survived if a few animals had not provided the essential proving ground for new medical miracles.

In the same ward was 22 year old Seaman J. L. Sanders, with his entire right side paralyzed by a gigantic brain abscess. This time penicillin was inserted directly into the brain cavity before the skull flap was closed. Again, death was cheated of an almost certain victim. Again the record book was closed with that masterpiece of medical understatement: "an uneventful recovery."

Neither of these men knew that the technics to which they owed their lives had been perfected at the $2,000,000 research laboratory of Operation X. If they thought of it at all, they might have wondered how many men before them had died so that surgeons might learn how much or how little penicillin should be inserted in a brain.

**Army and Navy surgeons never performed "blind" experiments on the wounded, for associates in Operation X had perfected methods**

In actual fact, however, Army and Navy surgeons never had to perform "blind" experiments on men. Their associates in Operation X solved this and scores of other problems through experiments on a relatively tiny number of dogs.

You may recall the stories that cropped up during the early days of the war — stories about emergency operations, for appendicitis or battle wounds of the abdomen, being performed by laymen on longrange bombers or in submarines deep under enemy waters. They were wonderful news stories. Medically they left much to be desired. The death of acute appendicitis victims are almost always due to peritonitis. Massive infections and inflammations of the abdomen can only be avoided by the skill of a trained surgeon in the cleanliness of a well equipped operating room.

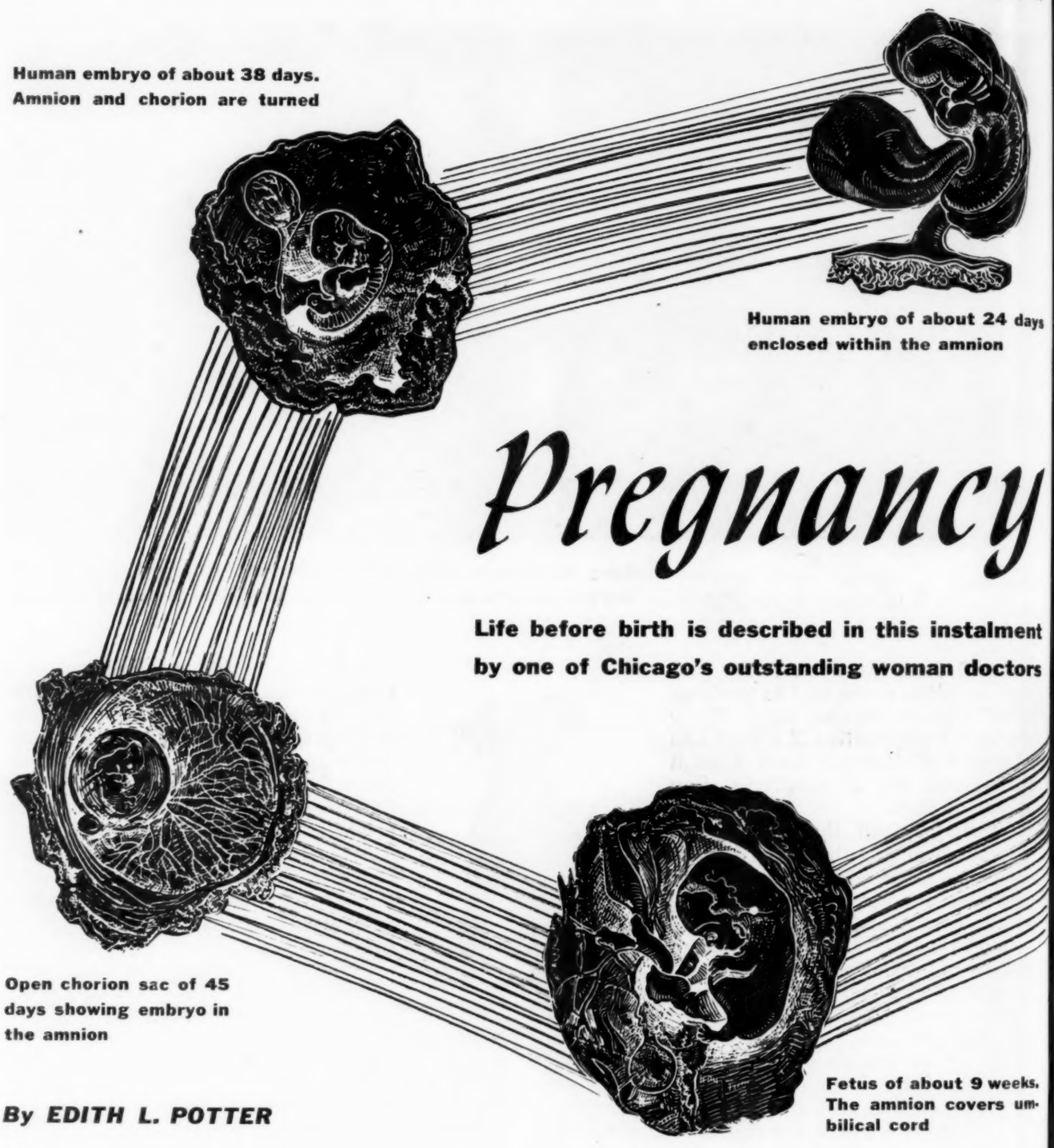
Experiments proved that given large doses of penicillin, dogs with peritonitis always recovered. Acting on the detailed data developed within a few short weeks through animal experiments, orders were issued discouraging surgery attempts by unqualified personnel and ordering adequate doses of penicillin. Case records show the new technic saved hundreds of men who would almost certainly have died after prolonged pain.

Pharmacist's Mate Harold E. Hirsch received the silver star for gallantry because he exposed himself to heavy enemy fire on the beach at Iwo Jima to rescue and dress the wounds of a fallen comrade. Hirsch left that bloody beach with a shattered left arm. Surgeons had proven methods to repair his severed muscles and arteries. But Hirsch's median and ulnar nerves were severed too. Unless they could be induced to grow properly together he would have, throughout life, a hand paralyzed and useless. Five years ago his chances might not have exceeded one in five. Today Hirsch is regaining both sensation and the use of his hand because Navy surgeons were able to wrap the joined ends of his severed nerves in tantalum foil.

Prior to the war doctors knew about tantalum. But it was only after experiments on dogs at the guarded laboratories that they found that tantalum, if wrapped around a sutured nerve, would act as an inert casing protecting the delicate injured fibers until they grew together and restored function to a limb that would otherwise have to be amputated or remain useless.

The value of animal studies — particularly dogs — is even further demonstrated in the tale of the tantalum plates. European surgeons have long used pieces of animal bone to repair human skull wounds. The Russians have achieved startlingly successful results from operations of this sort. They also had failures when, after months, the inserted bone became "dead" and created complications requiring a long period of further treatment.

American military surgeons felt certain that tantalum plates instead of bone inserts could be used and that the insertion of such plates would be followed by a progressive growth of natural bone until the tantalum became virtually a part of the living skull. Be- *(Continued on page 636)*



Human embryo of about 38 days. Amnion and chorion are turned

Human embryo of about 24 days enclosed within the amnion

Open chorion sac of 45 days showing embryo in the amnion

Fetus of about 9 weeks. The amnion covers umbilical cord

# Pregnancy

**Life before birth is described in this instalment by one of Chicago's outstanding woman doctors**

***By EDITH L. POTTER***

IT WAS almost Thanksgiving when Marion was certain the new baby was on the way. She had been convinced long before that but it was a relief to have it confirmed by Dr. Raidon.

"There is no longer any doubt, Mrs. Holmes, but that the nursery should have an occupant before the Fourth of July."

"If it's going to be June no one will have to fetch you with a sleigh during a blizzard as they did Dr. Tom when I was born," Marion said, and after a few more cheerful words left the office.

John was exultant when he heard the news. He immediately started asking, "What color shall we paint the nursery—and when do we get the furniture?"

Marion laughed. "After all, little Hiram isn't to arrive tomorrow. Let's wait until we find something special. His first bed can be made from a clothes basket. We'll pad the inside and cover the outside. Nothing must come in contact with a new baby that can't be boiled. Consequently his clothes, his bed and everything must be simple. But it must be blue, for whoever heard of having pink for a boy?"

As time passed Marion found her thoughts centering about her plans for the baby. The evenings she and John spent by the open fire were among the happiest she remembered. It

was better than when they were first married for now they had the background of years together and mutual understanding to enrich their companionship.

"I wish," said Marion one evening, "that I knew what was going on inside of me—what little Hiram looks like now. He will be 9 months old when we first get to see him. Think of

**Uterus section showing relation of fetus to placenta and membranes**

missing that part of his life time. It isn't fair!"

John was amused at her sudden outburst and although he did not confess it, he had much the same feeling.

He said understandingly, "Why don't you talk to Dorothy Kent? She's the girl to tell you what you want to know."

"That's right," replied Marion. "I forget she is a doctor because she never sees patients, but this is certainly her field. Didn't she tell us that unborn babies have been one of her principal interests for ten years?"

"Yes, at the time she said that I thought she was trying to shock Jerry Jordan, who was with us that night. After all, the first nine months is an important part of a person's existence."

"Almost the exact words she used," responded Marion. "I understand now why she finds her work fascinating. She said in about one out of five pregnancies something went wrong before the baby was born. Sometimes it occurred early and sometimes not until just before birth.

"John, how awful! I never realized before what that meant! Little Hiram! It can't happen—not after we have waited so long!"

John's attempts to change the topic of conversation were useless.

"I want to know, John, whether anything could happen to my baby now. Dr. Raidon said everything would be fine, but I do not believe he would tell me even if he thought it might not be. I am going to talk with Dorothy. I would feel safer if I knew about the things that could go wrong."

"Nonsense, Marion. The more you know the more you worry. But why not ask Dorothy for dinner soon? Thursday, perhaps? I'll ask Jerry, too. They liked each other the time they were here before, and I think Jerry has been taking her out occasionally."

"I would like to, but let's not have Jerry. Dorothy refuses to be serious about her work when there is any one else here. Then she says she plays at it and has fun at it and doesn't say anything else. I really want her to talk."

Marion went to the telephone and called Dorothy.

"Can you come for dinner Thursday night? There will be just you and John and I by the fire, a little music and lots of conversation."

"I'd love it," replied Dorothy. "I prefer seeing you and John to almost any one else. John never has told me his ideas about the fourth dimension and I'll have a chance to listen if you promise lots of conversation."

"But the invitation has a string attached. John and I want to ask questions. Study all your books and be prepared to tell us about your life's work in simple words and easy stages."

"That sounds strenuous," answered Dorothy. "Why the sudden interest in my life's endeavors?"

"I will tell you Thursday. We will have all the things you like to eat and that will put you in a good humor before we quizz you."

Dorothy arrived promptly at the appointed hour on Thursday evening. She sank into a chair and said, "It has been a strenuous day. New students, a new assistant and much routine work. It is good to be here. This house rests me more than anything else in the world. Now I want to know what it is you need to talk to me about."

"We won't bother you until after dinner," Marion answered, "but you have never talked to us about your work and we have an idea that you can tell us everything we want to know about little Hiram. We are finally going to have a baby—by the first of July, the doctor says. John and I want to know what he looks like now, and how he grew and what he is going to be doing from now on until he is born."

"Wonderful," said Dorothy. "My congratulations to you both. But this is a large order for one evening even though I appreciate your sudden interest in prenatal facts. It has taken me ten years in medical school and post graduate study and another ten years in research to learn what you want me to tell you tonight."

"We wanted it in easy *(Continued on page 618)*

By ANN G. NORELIUS

# War Casualties of the Home Front

FEW laymen realize how many persons became ill on the home front from overwork, anxiety, sorrow or confusion incident to the war. Actually, much of this sort of illness still persists.

Mothers mourn missing service men

As my physician and friend of many years said to me the other day as we discussed this problem, "The lovely woman of 55 whom I just dismissed seems to be as much a war casualty as if she had been wounded on Iwo Jima. I saw her first in 1942 when she came in with her husband. He was complaining of an overpowering sense of fatigue, loss of appetite and weight, insomnia and jitteriness. He looked as if he should have a cancer growing somewhere but I couldn't find it. Then his wife took me aside and said, 'I feel he is dying of a broken heart. After a hard struggle up the ladder to success he felt in 1941 that his dreams were coming true; the fine building that housed his automobile agency was all but paid for and comfort and ease were almost in our grasp. Then came Pearl Harbor and the order that stopped the selling of cars and tires. For a time my husband struggled on, trying desperately to keep solvent through the servicing and repairing of cars. But his mechanics were drafted, and after a time, with the long hours and worry, he broke down and gave up. At his age he says he can't face starting life over again in some new field. He does not eat or sleep, and is going steadily down hill.'

"Now, with her husband dead, the wife is back, her nerves breaking under the strain of having with her her widowed daughter and two active, normally noisy little boys. When she was young my patient had no difficulty in raising her children; nothing bothered her and when awakened at night she could attend to a wailing child and promptly go to sleep again. Now, with high blood pressure, hot flushes, insomnia and need for quiet and rest and a daily nap, the incessant activity of the children is terribly hard on her. She adores the boys but their constant chatter and frequent conflicts nearly drive her insane.

"On top of this strain are those distressing ones which come whenever two women, no matter how devoted they are to each other, keep house under one roof. In spite of efforts to keep peace, the elder woman will often find herself upset over the younger one's leaving dishes in the sink, or starting dinner late, or smoking too much, or playing jazz records at 1:30 in the morning.

"In any good history of the war effort the grandmothers of America should receive a spe-

cial medal of honor. Hundreds of thousands of them are still carrying a heavy burden, and they will have to go on carrying it until the housing shortage is over or widowed daughters are married again.

"Many mothers of soldiers and sailors are still suffering from the strain of constant apprehension, sleepless nights spent wondering if the loved aviator or Marine or infantry man or sailor was coming safely through the dangers of the front. During the battle years most of the mothers were outwardly brave and calm but inside they were tense and full of fears that frequently made them ill. Some, because of constant anxiety, developed organic diseases such as diabetes, exophthalmic goiter, gastric ulcer, asthma and high blood pressure. Others became ill through worry at watching a husband slowly but surely destroy himself with wartime overwork.

**Executives overwork on postwar demands**

"Many women went to pieces nervously during the war because of having to lose a home with its loved furnishings, or because of their inability to stand well the discomforts incident to following a husband from camp to camp and from one uncomfortable shack to another. Some made so much money in factory work that they became demoralized and drank to excess. Others became demoralized when left for years to live alone, while others went to pieces when faced with widowhood. Many a soldier's wife or sweetheart broke down nervously because of the constant burden of worry—of fear either that the loved one would get killed or that he would stop loving her and drift away. Many women suffered agonies when letters failed to come or when the missives contained no beautiful words of love and yearning. Many women, knowing that their hold on the affections of the husband had worn thin before he left for war, had reason to fear that the bond would snap and disappear entirely with the long separation. Many of these women developed sick headaches and other troubles when they lay awake night after night trying to make up their mind what to do about an unsatisfactory marriage—divorce or not to divorce. Other women who loved greatly, and were greatly loved, suffered and became ill because of loneliness and hunger for the goodnight kiss and the arm about them. Disturbing to many was the thought that the sand was running rapidly through the hourglass, and that years were passing which should have been filled with happy companionship and perhaps the bearing and rearing of several desired children.

"Only the other day," said the doctor, "I saw a man with a rapidly climbing blood pressure and breaking nerves who told of long hours of overwork. He and his four brothers had had to work so hard during the war, getting out materials needed by the armed forces, that all his brothers died in their fifties of heart disease. The remaining brother worked day and night to keep the business going but now he just must slow up, take life easy and get good assistants or he too is apt to go.

"An overworked executive with failing health said the other day, 'Yes, some of my old assistants are coming back but as yet they haven't taken hold well; they are restless, and after all they have been through, all they have seen and done, like Kipling's soldier, they find it hard to settle down again to humdrum buying and selling.'

"During the war I saw any number of executives and business men who were cracking up nervously because of the strains of adapting their business to war work, and the problems of getting work out in spite of difficulties. These men were tired out; some became irritable and so emotional that they would cry; some developed bad headaches and insomnia, and in some their heart arteries began to fail.

"Many men, left without adequate help, carried on by working eighteen or twenty hours a day. I can remember two men who felt such great responsibility for refrigerating tons of perishable food that they worked day and night until their bodies rebelled. One man who cracked up in this way may never be strong again; in his city he was the only one left capable of repairing and servicing refrigerating machinery. Another was the only man left who could service oil burners. Yet another, who ordinarily had a number of workmen to help him, handled a big chicken hatchery alone day and night until he began to vomit so constantly he had to stop. A newspaper man, after losing many of his best editors, tried for a while to run a morning as well as an afternoon paper. He slept in his clothes and got to living on black coffee, whisky and strong cigars. As any one could have prophesied, after a while he cracked up and went to pieces nervously."

Said the doctor, "I am still seeing owners of large farms and ranches who have broken under the strain of trying to run a place without the help of sons and hired men. I remember a man of 55 who complained of curious spells of numbness, weakness, mental confusion and difficulty in swallowing *(Continued on page 614)*

# Accidents in the Home

**By JEROME S. PETERSON**

HAVE you ever wished the rooms in your home didn't have corners in which dust collects? What housewife hasn't! Well, before long, this may not be wishful thinking. Blueprints architects are making of tomorrow's homes show that square corners will be a thing of the past. Room edges are to be rounded. That's not all the architects are planning to make living easier. Homes will be built with ample closets; furniture will be made of easy to clean materials, and they say they'll even make it possible for the bathroom floor to be warmed for your feet after you shower or bathe. What next will they devise?

Some day, too, along with other amazing new contrivances, they may make homes completely accident proof. They may invent a system of electric eyes or some other gadget which will warn people when they're approaching a spot in the house where an accident is likely to happen. Every one knows that traffic lights on street corners help eliminate automobile accidents. We need a system similar in our homes, for you may not know it, but more accidents take place at home than anywhere else. Twice as many New Yorkers were killed by home accidents last year as by any other kind. And it's estimated that more than a quarter of a million people in this city were hurt last year in home accidents of one kind or another. This covers everything from a slight nick with a kitchen knife to a fall on a grease spot that can keep the victim bedridden for months.

Isn't there anything that people can do right now to make home a safer place? Must we just continue having accidents until a magical system of "accident-proofing" is invented? No, there are a number of things that every one can do now to avoid home accidents. Just talking about them is not enough. Between now and when you do something there's time enough for plenty of accidents. Don't think your house is immune to accidents because you've never had a serious one. Most of the people hurt in home accidents last year probably felt the same way, up to a second before their accident.

In more ways than one, summer time may be danger time in the home. It's the season when some people are most susceptible to accidents. Why? Because accidents are most likely to happen when people are short tempered, nervous or "hot and bothered." And you know how heat and humidity can leave even the calmest person with a frayed temper and a completely exhausted feeling. To be on the safe side, avoid any dangerous household chores when the weather has you "down." When you must stand on the top of a tall ladder to reach something, or must do something equally hazardous, save it for a cooler part of the day or evening.

Another way to prevent accidents is to anticipate the possibilty of an accident before it happens, and simply avoid it. If your kitchen curtains are long and flowing, and the wind blows them into the neighborhood of your hot stove, it may be too late to

prevent a fire. Had you pictured such a mishap in advance, and tied the curtains back, everything would have been all right. There may be little you can do to save yourself from a hard fall, if you're dashing down the stairs and your youngster's roller skates are on one of the steps. If the skates had not been left there, you could have continued your walk without misfortune. Yes, it's as simple as that—and it may mean saving a life!

More home accidents take place on staircases than anywhere else in the house. This will probably continue until people see that they're only courting trouble by using staircases as storage places for toys or temporary resting spots for brooms, mops and pails. If there are children in your house and they're home this summer, their roller skates, rubber balls and jump ropes will probably get little daytime rest. When not in use, though, they should be out of every one's way. Set aside a special spot where they are to be stored, so that neither you nor your children trip over them. In case you haven't closet space to spare, use a large box or carton which can stand in some inconspicuous corner. Whatever you do, keep your youngsters' toys off the stairs. And don't use the steps leading to the attic or basement to store your winter equipment, such as draperies, winter rugs and other articles.

Speaking of rugs, what kind are on your floors now? Have you rolled up your winter ones and substituted a few light scatter rugs for the hot months? If so, you'd better anchor them securely to the floor. A loose rug has a way of flying out from under one and throwing a person in the air. This won't happen to you if you use nonskid pads beneath them, or sew some old rubber jar rings to the underside of the rugs. Should your floors go bare in the summer, be sure that they aren't an indoor sliding pond. Highly polished floors are slippery. Remember this the next time you wax your floors. Apply the wax in thin, even coats and rub it in hard. This will increase your chances of remaining on your feet.

You may not fall far on a highly waxed floor, but you can easily fall hard. This also is true of an unexpected tumble on the bathroom floor. These hot days, you may find several sessions in the bathtub or shower your best prescription for keeping cool. And you're right, too. You couldn't find a better refresher. But don't spoil your fun by losing your footing in the bathtub or on the bathroom floor. A bathmat will help keep you safe. It's best to have two of them, one on the floor and one in the bathtub. Be careful, too, about leaving the soap in the soapdish. The next bather might take a painful tumble if a slippery cake of soap were underfoot. Or if soap were carelessly left lying around by some one else, you might be the one to fall.

Some people say that the best way to live through a hot and humid summer evening is to spend it in the bathtub with a good book. If you try that, don't be tempted to make the evening complete by plugging in the radio nearby and listening to your favorite show. This may seem an ideal setup but it spells danger with capital letters. You've heard, haven't you, what can happen if you touch an electric appliance when your hands or body are wet? When your skin is wet, you're a potential victim for an electric shock. Water is a good conductor of electricity, and it turns you into a human lightning rod. See why you should keep the radio out of the bathroom? This applies to an electric fan, too.

In any room but the bathroom, of course, a fan is a good way to conquer the heat. Before you set it in motion, be sure that it's beyond the reach of your children's inquiring fingers or toes. Don't rely on the possibility that they will know better than to poke their fingers into the blades of a *(Continued on page 610)*

**Only a small fraction of the sun's energy strikes the earth, yet without this tiny amount, plant and animal life would perish**

***By GEORGE CLINTON ANDREWS***

ONE of the important characteristics of the sun is its radiation of energy in the form of light, heat and other electromagnetic vibrations that are sent forth regularly and ceaselessly.

Only an insignificant fraction of the total energy strikes the earth, yet without this small amount, plant and animal life on this world would soon die.

For instance, in the constructive metabolism of plants carbohydrates are formed from the carbon dioxide of the air and water, through the action of light on chlorophyll.

The stimulating action of light on the growth and development of animals is also generally known. However, only a small fraction of sunlight contains the shorter, ultraviolet rays which

# THE SUN

## *Friend or Foe?*

exert this important biologic action. They lie in the ultraviolet spectrum between definite wave lengths. These so-called 'vital' rays are not transmitted through ordinary window glass as they have little power to penetrate and do not pass to any extent through paper or cloth.

Interesting experiments have proved the importance of these short, vital rays to growth. For example, two hundred and fifty week old chickens were divided into two groups and confined separately in a green house.

Both groups received the same care and food. But one group received daily doses of ultraviolet light in addition to the light which came through the green house glass. This group thrived. But the other group which did not receive the short wave lengths of ultraviolet and had only the ultraviolet that penetrated the window glass, were dwarfs.

Cholesterol, a substance found especially in bile and nerve and skin tissues is able to cure rickets through the absorption of ultraviolet light. Cholesterol and other sterols in the skin, are activated into vitamin D. Similar changes are produced in cod liver oil and other food products such as milk, vegetables and greens through the activation of substances contained in them by ultraviolet light.

In conditions due to a calcium and phosphorus deficiency, sunlight serves as a catalyzer, augmenting the calcium and phosphorus content of the blood. Sufferers of some of the greatest diseases known to mankind—tuberculosis, arthritis and psoriasis, benefit by sunlight. These diseases are extremely uncommon in the tropics—where people spend a great deal of time in the sun.

The body requires a certain amount of light but beyond definite limits insufficient or excessive amounts are injurious. The skin, being the protective covering of the body, is especially exposed and subject to injury from physical forces.

Sunburn is a common injury. Blondes are more susceptible to it than brunets and the individual reaction varies. In some persons the skin turns red rapidly on exposure and is associated with local burning and heat, or blister formations. In others the reaction does not appear until the day after exposure. Mild burns result in a hot, uncomfortable feeling in the skin which turns red and dry. These symptoms generally disappear in from twenty-four to thirty-six hours and are followed by varying amounts of pigment.

Severe burns result in great discomfort which is intensified by the slightest body movement. Contact with bedding or clothing is practically unbearable. The skin is parched and an angry, scarlet hue. Shock, chills, fever, nausea, rapid heart action and sense of impending dissolution may be present.

These symptoms, more or less in their entirety, may persist for a day or two. Toxemia and pain generally begin to subside by this time. Blister formations and firm swelling of the ankles, legs, face and other parts of the body may occur.

When the acute symptoms disappear, the skin peels and its pigmentation is increased. After repeated exposures brunets may develop so much pigmentation that they are protected by it from sunburn.

Formation of pigment may be so rapid and give such complete protection that tanning may be the only effect. A variety of substances known as photosensitizers applied to the skin before exposure, or in some instances taken internally, may increase one's reaction to light. A few of them are coal tar, pitch, asphalt, creosote oil, fluoresceine, figs, buckwheat, India wheat and wild carrot. *(Continued on page 632)*

By

EMILY C. DAVIS

**Food must be perfect for canning. Even if decayed spots are removed the remaining bacteria might cause the pack to spoil**

# Home Canning *With a Purpose*

WHEN the last of her tomatoes was safe in its jar last autumn, one American housewife remarked, "Well, that's that! Now that the war's over—canning with a purpose is over."

Few people would have argued the point last September. But now—here patriotic Americans are, in the summer of '46, called to the colors to do another special job of home canning, provided they can do the job well. Some with sizable gardens are also in the midst of plans to freeze, store, dry and brine more food. And it is in line with a greater purpose than even war provided.

In bountiful America, home food preservation has assumed the urgency of a life saving drive, to help feed a world in which starvation is alarming and terrible.

True, food put up by families will be eaten by these families and not sent abroad. That's as it should be. Home canned tomatoes and peaches in glass jars are not material for relief cargoes. But the food these families put up by their own enterprise and good will eases the pressure on commercial food supplies that can be exported.

If home canning conjures up the scene of some familiar pantry and its rows of jars, you can arrive at a nationwide perspective by multiplying one home supply of food by twenty-five million. This is the approximate number of households in the United States that have been canning food for the past few years.

Home canners set a new record in the midst of the war, when their estimated pack for 1943 reached more than four billion jars and cans

of food. A relatively small drop in this pack has occurred since then.

With billion jar figures in mind, it is easy to see that, when the National Garden Conference called on home and community canners, along with victory gardeners, to remobilize "to increase food supplies at home and fight famine overseas," the conference was asking for help that rolls up a mighty total.

When families in the United States can fruit, they do a great deal of buying, particularly when peaches are ripe. When they can vegetables, they more often pick their canning material right out of their own gardens. Consequently a big home canning season must start with a wave of gardening enthusiasm.

This year, gardeners seem exceptionally willing. A public poll of intentions to plant home gardens was reported in April. It showed that the National Garden Conference is likely to be close to success in attaining its ambitious goal of twenty million victory gardens. This is a greater number than were planted in the war years.

The family that puts up food is helping itself as well as the unseen neighbors overseas. As always, tomatoes and green and yellow vegetables, and other garden crops represent great nutritional wealth in vitamins and minerals. The family that grows enough food to enjoy its garden in summer and to lay up stores in pantry, freezer or bin, is in a position to draw on that wealth the year round. Nutrition standards call for at least four servings of fruit and vegetables daily.

The appeal from the President's Famine Emergency Committee to Americans, urging them voluntarily to use 40 per cent less wheat, turned the spotlight on vegetables. Nutritionists suggested to gardeners that they might increase plantings of vegetables, which can take on one or more of wheat's nutrition jobs. They may provide, for instance, carbohydrates and bulk to make a meal more satisfying, and the protective B vitamins, especially thiamine.

Consequently, many gardens may be featuring seed vegetables—which are not in this case vegetables saved for planting as seed. Seed vegetables that gardeners grow for summer meals and for canning are the kinds of which the seed part is eaten, such as peas, lima beans and garden soybeans. Corn is in the seed class, too, although it requires more room than most small gardens can spare.

Foods that the homemaker puts up will retain worthwhile amounts of vitamins and other original values, provided they are well handled, from garden to canner and storage.

This year, above all years, food worth canning is worth canning well. For those who are joining the canners—and those in the strictly non-canning class who would *(Continued on page 638)*

**Speed, under control, is very important in successful canning for time is food value**

**Up to date canning directions based on latest scientific finds are also important**

# Are Colleges Inadequate?

By CALVIN T. RYAN

FROM the beginning, remember there is a difference between the college and the students enrolled there. The students aren't the college, although there could be no college without them. But certainly the curriculum, the administration and the faculty have something to do with making a college. Without them there could be no college. What they are determines what the students will do and become.

In considering the work offered at a college, we must separate its nature from the intelligence of the students, although the intelligence of the students determines largely the quality of work they accomplish. If the work offered by a college is exclusively that of the intellect, the students will not be educated in any well rounded sense, regardless of their intelligence. There is more to a student than his mind, and when that "more" is not provided for or is misused the student may suffer the consequences not only mentally, but physically and emotively.

One of the legitimate charges against colleges and universities is that they do not provide for all of the student's mind. Mental hygienists assure us of that. Curriculums provide for mental and physical training, but omit what happens to the affective nature of the students. Unless the college has on its faculty a psychiatrist, or a dean trained in counseling, students have no resource for emotional disturbances growing out of their general environment. For that reason, we are told students "stumble out of the schools only to be picked up and tended a few years later." Perhaps that is what Dr. Vannevar Bush, Director of the Office of Scientific Research and Development, had in mind when he reported to the President of the United States last July that mental disease was increasing. "Each year," the report says, "nearly one hundred and twenty-five thousand new patients are hospitalized."

The annual suicide rate of eight thousand is not from a selected non-college group, but includes "nervous breakdowns" and failures from our colleges as well. Mental hygienists say many of these could be saved if found in time, and many could be helped who, although they do not commit suicide, go out into the world "considerably warped."

Colleges are too intellectual when they ignore this side of the student's mind. They are too intellectual when they make no provision for the students' emotions, and give them an over supply of intellect; when they neglect their mental health and cater only to their physical health. The physical fitness program has been popularized by the recent war, but for some reason we have not heard much about the men who were rejected, or were later discharged from service, because of mental unfitness. Draftees were passed by their local draft boards as being physically sound enough to enter the service, only to be rejected when they faced the psychiatrists and neurologists.

Colleges are handicapped in that they do not have screening tests for admissions. Many state colleges have to take every one, for at least one semester. Colleges with entrance standards base them on the high school scholastic record of students. Work in most of American high schools is deliberately arranged so that all who enter may pass. Being in the upper fourth, or even in the upper tenth, of a graduating class of from one to ten is not a difficult feat. From these, colleges receive whoever may come.

Through some screening process similar to that used by the military services, boys and girls suffering from emotional disturbances that are liable to endanger their mental health might be prevented from further aggravation of their condition by additional studying. But we have nothing of this kind. If a student has a passable I. Q. and has done fair work in high school, he is eligible to enter college and begin his career toward success or failure. His college work will be rated largely on the amount of intellectual ability he uses in meeting class requirements. If he should unfortunately break a leg, or have a cold, he will be looked after. If he acts with a fair degree of sanity and doesn't cause too much annoyance to the faculty and students, he will be allowed to graduate unmolested and unhelped.

What the student believes, unless he is too

openly radical, does not concern the ordinary faculty member. Yet, Dr. C. M. Campbell told us twenty years ago in his "Delusion and Belief," that what a person believes does matter to his health, and that the beliefs of groups are part of the field of public health. Health has come to mean "sanity of beliefs as well as soundness of body." Hitler and his behavior, the Nazis and their beliefs, within the last ten years bear out the contention of the mind specialists. Sanity of beliefs does not rest exclusively on intellectual attainments. Plato insisted his guardians of the state should be something other than men with high I. Q's.

In industry we are beginning to realize the human element counts. Knowing how to understand others, how to allow for their beliefs and how to recognize the human element even in a technological problem, are essential to the harmony needed between capital and labor. "If it is to prepare men for life," Wallace B. Donham, formerly Dean of the Harvard University Graduate School of Business Administration, says, "the college can no longer leave human understanding and social experience to the accident of college environment." Again mere intellectual training is not enough. The scientist may be scientific, the foreman efficient, and if they lack knowledge of human emotions, if they are ignorant of how men act under certain social pressures, their superior knowledge may be their destruction. So when we say that colleges are too intellectual because they do not pay enough attention to the emotive side of human beings we need only turn to what industry has to show us. A knowledge of men and women as Shakespeare understood them may be of greater help than the knowledge of how to conduct an experiment in physics or the ability to throw more than an average number of baskets in a basketball tournament.

**Health has come to mean a sanity of beliefs as well as soundness of the mind and body**

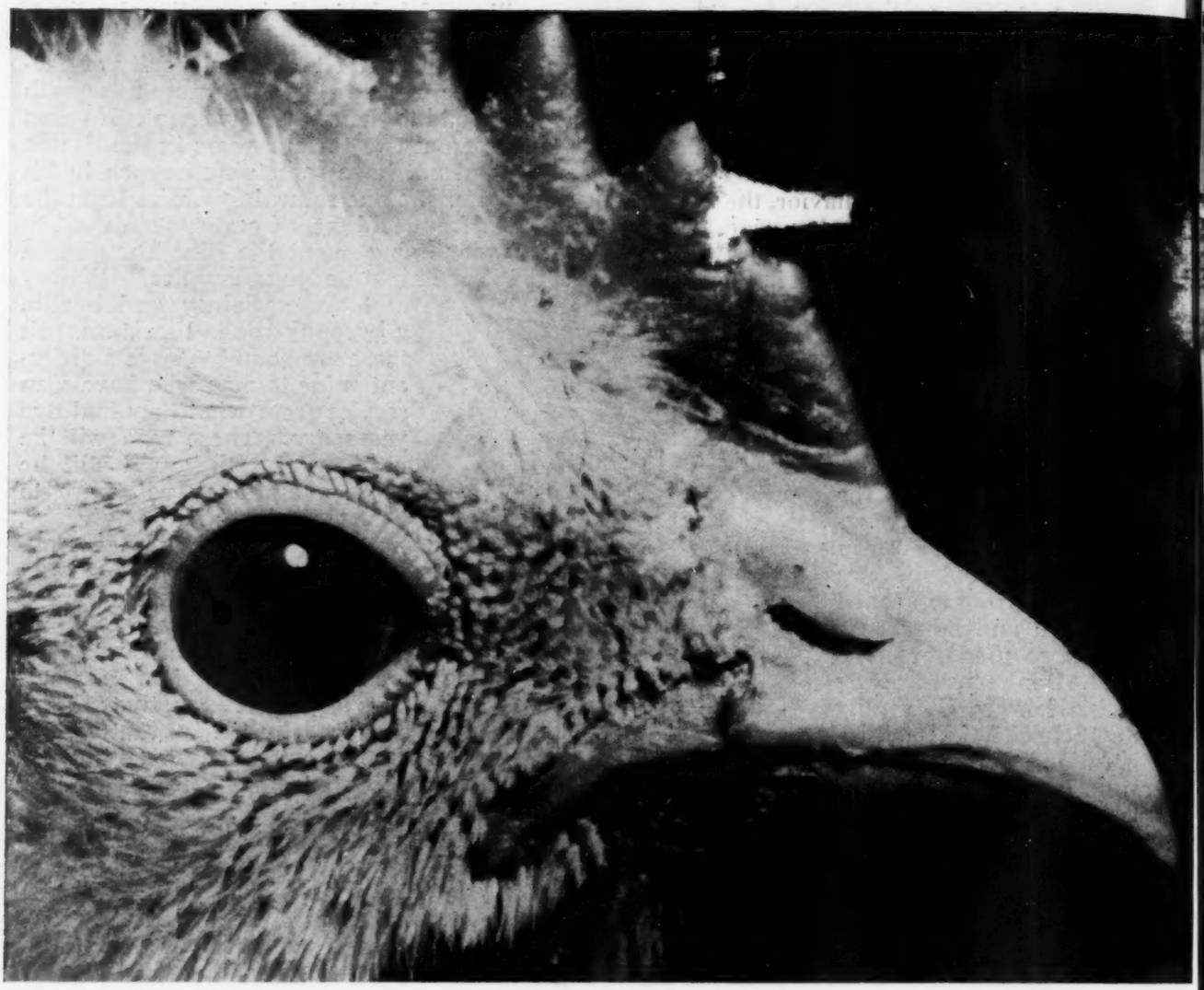
With former service men and women taking advantage of the now liberalized G. I. Bill of Rights, colleges will have an even greater problem of adjusting these men and women to a too narrowly intellectual curriculum. Not that these men and women will be unable to cope with the offering or that they will be unwilling to try. Rather it will be the sudden change in their environment. Some of them may question the "sanity of belief" of their instructors. Or some of the faculty may question their beliefs.

What may be even more serious is that the men will need help in their emotional adjustments. They will suffer reactions. They may even "blow up." Not to have a faculty or faculty member who can help or sympathize with them, will add to their maladjustment. No man can serve from two to four years in the Pacific theater and not have something happen to his emotive life. As one returning soldier from the European front told me, "I never again want to hear any one sing about the Blue Danube. I crossed it one night under enemy fire." History and art, sociology and health, geography and literature, all these are bound to have a different value to men who have seen service from what they had five years ago. These men will be realistic, but they will still be human, and they will have to be approached as human beings, not as automatons to be manipulated.

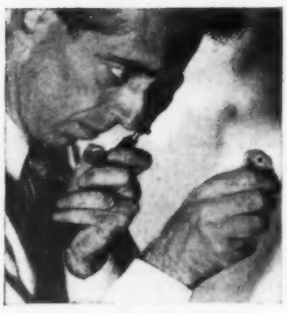
Adjustments necessary for more desirable college offerings will make the student load heavier. Any student who suffers from overwork, that is work required by his instructors, has no business in college. Students lose their health from what they do besides their college work more often than from what they do for their instructors. For some students required classroom work isn't difficult. Most colleges adjust their work to the average student and this does not tax the intellectual ability of the exceptional student. Students with normal intelligence work with greater interest when they have much to do.

What our colleges need are finer screening tests to eliminate the emotionally immature students, and a more efficient mental health program for those who enter and develop a disturbance. Studies show that the ordinary student reaches the peak of his moral development around his sophomore year. In this case he should be given more training during his freshman and sophomore years that would assist him in arriving at ethical and moral values.

Some cases of thwarting of personality development are due to the failure or inability of the student to communicate his ideas and feelings. Other cases are attributable to the inability to read enough to understand himself and his problems—in short, deficiencies in language and literature. Students who have been helped with their speech problems have succeeded in adjusting their personality problems. The vital role of language in the devel- *(Continued on page 615)*



Normal chick's eye that has not been exposed to ultraviolet light



# *Effects of* **Ultraviolet L**

By
**E. D. TILLYER**

EXPERIMENTS with baby chicks reveal that exposing eyes to high intensities of invisible ultraviolet light ranging from 300 to 365 millimicrons in wavelength—a range previously considered harmless by some authorities—delays dark adaptation and impairs visual functions even though no obvious pathological changes in the eyes can be observed.

This is the conclusion of Dr. Ernst Wolf, of the Harvard Biological Laboratories, who conducted the research under the sponsorship of American Optical Company.

As human eyes could not be utilized because of the potential danger, the Harvard biologist selected baby chicks for the testing purposes as the visual characteristics of their eyes approximate closely those of a human being. Chicks also obligingly keep their eyes wide open during exposure to ultraviolet. For this reason, they are ideal subjects for experimentation.

After a year's study of the effects, Dr. Wolf discovered that the ultraviolet light in question definitely impaired the functioning of the chicks' visual mechanism.

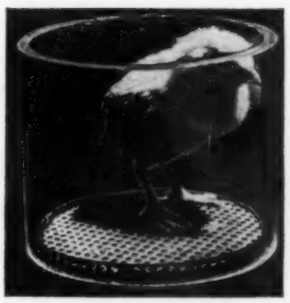
In view of his findings, the scientist recommends that in order to preserve efficient night vision protective lenses excluding these dangerous rays should be worn by welders and their helpers, skiers, fliers, sun bathers and others exposed to high intensities of these radiations.

Chick's eye 24 hours after exposure to ultraviolet radiation of quartz mercury vapor arc

# Light *on Vision*

This important eye research, an example of the ceaseless investigations leading to the protection and betterment of human vision, is a fascinating story of adventure in science. Here is a brief resume of the background and steps involved in Dr. Wolf's ultraviolet study.

Light rays can be accurately measured by means of complicated laboratory devices. Visible light rays, for example, range in length from about 400 to 750 millimicrons (a millimicron is 1/25,400,000 of an inch). The invisible ultraviolet region starts below 400 millimicrons and includes shorter



waves until air absorbs them around 190 millimicrons.

In the past it has been recognized that the excessive ultraviolet rays encountered in welding operations, in the arctic regions or at the seashore may cause eye damage, ranging from slight irritations to severe burns.

The welding arc emits ultraviolet rays ranging from 190 millimicrons to the visible region. At the beach the rays extend from about 290 millimicrons up to the visible, depending on the atmospheric conditions. However, wave lengths producing easily observable pathological conditions in the chicks' eyes are those shorter than 300 millimicrons. Previously, some authorities had assumed that if ultraviolet below 300 millimicrons were excluded by filter lenses the possibility of eye injuries would be eliminated.

Dr. Wolf's conclusions that ultraviolet radiations in the interval *(Continued on page 624)*

# HEALTH LESSONS

## In Old Fables and Fairy Tales

By CLAUDE LILLINGSTON

BEING an adult fairy tale addict, quite unashamed of my addiction to this little frailty, I would like to ask the readers of HYGEIA to join me in exploring the health aspects of some of the favorite fables and tales.

The story of the gluttonous wolf is part of the folklore of many countries. It is to be found in Grimm's Fairy Tales, and it is from this version that I quote:

### The Gluttonous Wolf

Once upon a time a wolf and a fox set up house together. The fox, being the weaker of the two, was obliged to do as he was told, and this made him heartily desire to be rid of the wolf. One day, when passing through a wood, the wolf said: "Red fox, get me something to eat, or I will eat you."

"Well," said the fox, "I know a man who has been slaughtering, and has all the meat salted down in a tub in his cellar. We will go and get it."

The wolf agreed, saying: "I must go with you, and you can help free me if anything should happen."

The fox then showed the wolf all the byways. At last they came to the cellar where they found meat in abundance. The wolf instantly attacked it greedily, saying at the same time to himself: "There is no occasion to hurry."

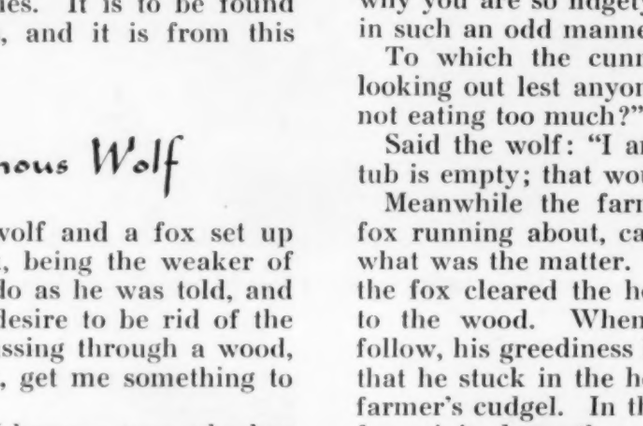
The fox also showed no unnecessary reserve in the matter. But while he ate, he looked sharply about him. He ran occasionally to the hole by which they had entered in order to make sure that he was still small enough to get out the same way he had come in.

Quoth the wolf: "Friend fox, pray tell me why you are so fidgety, and why you run about in such an odd manner?"

To which the cunning fox replied: "I am looking out lest anyone should come. Are you not eating too much?"

Said the wolf: "I am not going away till the tub is empty; that would be foolish!"

Meanwhile the farmer, who had heard the fox running about, came into the cellar to see what was the matter. On the first sight of him, the fox cleared the hole in one leap and sped to the wood. When the wolf attempted to follow, his greediness had so increased his girth that he stuck in the hole and was killed by the farmer's cudgel. In the safety of the wood, the fox rejoiced greatly over his liberation from the old glutton.



### The Troll Who Built Kinn Church

On the island of Kinn, on the west coast of Norway, there stands an old stone church in which there is a carving whose central figure is a woman. At her feet is a little troll or dwarf. He is the troll Fin or Fine whom Whittier has immortalized in his "Kallundborg Church." The moral of this tale is as simple as it is profound.

Give it a name! As soon as you have put a name to it, the ogre or troll you so greatly dreaded comes tumbling down reduced to nothing.

Once upon a time, when Otto reigned north of the mountains, and Haakon the Rich was King of Norway, there lived a rich and beautiful king's daughter in Ireland. Her name was Sunniva. She was as wise as she was beautiful, and her piety was far-famed.

When Sunniva's father was no more, she reigned in his stead, an example to her people in all the Christian virtues. So great was her fame that it reached in due course a heathen king who, enchanted by all he had heard of her, asked for her hand in marriage.

But Sunniva had taken a vow to remain a virgin all her life, the more freely to serve God. Besides, nothing could be further from her thoughts than to marry a heathen. His offer of marriage rejected, the king proceeded to ravage Sunniva's country which, he said, he would lay in ruins if she remained obdurate in her refusal to marry him. Confronted by this terrible choice, Sunniva took council of her friends and kinsfolk, and determined to leave her country in the company of those who were willing to remain with her.

Sunniva's fleet consisted of three ships on board which were men, women and children. They took with them no sail, oars or rudder, for they wished to drift where God would lead them and nowhere else. The wind and tide carried them to Norway. Sunniva and her companions in the first ship landed at Selje, a small island on the west coast of the country.

On board the second ship there was another Irish king's daughter whose name was Borgny. This ship drifted ashore at the island of Kinn. The third ship also with a king's daughter, drifted ashore further south. Each of these king's daughters built a church there where their ships had come to land.

In the island of Kinn, Borgny and her followers lived in a cave, now known as the Borgny cave. To the west of the church is another cave, known as the troll cave. Here lived the troll Fin who had promised Borgny to build a church if she would become his wife when his work was done. Her contract with him included a clause according to which she would no longer be bound to marry him if she succeeded in guessing his name before the church was finished.

As it neared completion, Borgny became full of fear, but one day she heard a woman's voice in the troll's cave hushing a child. As she listened, Borgny heard:

*"Hush, hush, my child! Ere eventide,*
*Thy father, Fin, comes with his bride!"*

The riddle was solved. Borgny went back to the church where the troll was putting the finishing touches to its roof. Borgny called up to him: "Now, mind, Fin, lest you fall down!"

Whereupon troll Fin started so violently that he fell to the ground and was killed.

Whittier's troll was not killed by a fall from a church, but lived to scold his too garrulous fellow troll, with these lines:

*"That night the harvesters heard the sound,*
*Of a woman sobbing underground,*
*And the voice of the hill-troll loud with blame,*
*Of the careless singer who told his name."*

In Grimm's Fairy Tales, the same theme is to be found in the story of the dwarf Rumpelstiltz and the poor miller's daughter who became a queen by his aid and whose first-born child was to be given him if she could not discover his name in three days. The dwarf's secret was betrayed by a little man overheard singing:

*"Today I bake, tomorrow I brew,*
*Tomorrow the Queen's child is mine;*
*How very lucky that nobody knew,*
*The name Rumpelstiltz is mine!"*

## Illness by Suggestion

Peter Christen Asbjörnsen and Jörgen Moe are the great historians of fairy tales in Norway. Asbjörnsen was a scien- *(Continued on page 607)*

By FRANCES TURNER

**An ideal hospital visitor is one who is incurious, neat, sympathetic but cheerful, discreet and optimistic within reason. Abide by the fifteen minute visiting rule even when the patient is home. Leave while your popularity is at its peak!**

# I Wish She'd Stayed Longer

THE ideal visitor for a hospital patient is one who is brief, incurious, neat, sympathetic but cheerful, optimistic within reason, and discreet.

Hospital visits should not extend beyond fifteen minutes. Discount protests, "But you have just come," or, "You've no idea how lonely I've been." Don't let them betray you into a longer stay. Ill people habitually overestimate their strength. Seeing a friend stimulates them and gives them a deceiving sensation of well-being. Leave before signs of tiredness appear.

Exception to the fifteen minute rule is a fracture case, who has passed the shock stage and is fretting at his inactivity. One patient explained to me, "I get a shave and haircut every day. I'm such a good customer that the barber can't refuse to stop and play a game of checkers with me. He's a good player, too. Really scientific!"

Avoid commenting on the patient's appearance. Sick people are inclined to be sensitive. If you say he is looking fine when he knows he looks like an old carrot, he may feel you are being insincere. If he looks well, and knows it, he is afraid you may think he is malingering. Mention his sunny room, how the drapes contrast with the wall, or best of all, plunge into the amusing incident you have saved up to tell him.

If he works in your office, don't try to ease his mind by telling him everything is going smoothly without him. Heavens no! Tell him he is missed, that the entire place is frantic without him and that the boss is chewing his nails! Nothing is so satisfying to a patient flat on his back as the thought that at last his worth and indispensability are recognized.

I worked at a job once that was fairly specialized. It took practice and more practice. It was a bottleneck without which the department would have been inconvenienced. I worked at the job for years. Then I became ill with the flu and was taken to a hospital. It was satisfying to have members of the department fly in and out with papers and questions. My supreme moment came when one of the other ward patients said, "I wish I could be as important to anybody as you are to that department!"

If there is any time when it is proper to dress up, it is when you are visiting a sick person in a hospital. It may not be the best taste to wear your finest when you go to church, or on some other occasions, but it pleases a sick person to see you in your best. Wear your silliest and most fetching hat. Be prepared to tell the clever things that different people have said about it. It pleases a patient to think, "Well, I may be lying here looking terrible but by golly people will see I have friends who look like something!"

Be incurious. If the patient wants to tell you what is the matter with him, what the doctor said, what the nurse said, and where it hurts, be sympathetic, and let him get it off his mind. If he dosen't mention his illness, don't mention it. Some patients are reticent about having their illness discussed. You don't want to give the erroneous impression that you came to find out what is the matter with him!

Be optimistic, but not so optimistic that it seems like a pose. If the patient mentions his disfiguring accident, speak about the progress that plastic surgery has made in the last thirty years. A patient who has had an accident like that is in no condition to receive a visitor who prides himself on plain speech. I worked in a hospital once where a woman patient had had a disfiguring accident. After months in the hospital, the patient was considered strong enough to see her family. No plastic surgery had been attempted at that stage. We were glad she was alive. Her family arrived. No one ever learned what they said, but they must have been frank. After they left the patient said she hadn't realized she looked so horrible. She refused to eat. It was months before she was as well as she had been before that visit.

People generally like to take a present when they visit a sick person, and it is a pleasant custom. Flowers are appropriate, but they do make extra work for the nursing staff. Candy is pleasing, for the nurse anyway! One gift that is difficult to equal is a magazine. It doesn't fade. It doesn't melt on the sheet. If the patient doesn't care to read today, it remains crisp and inviting for tomorrow. It provides hours of entertainment. When it has been read from cover to cover, and the advertisements memorized, the nurse will trade it for magazines that the patient in the next room has finished.

Perfume or cologne are welcome luxuries for a sick person, and a refreshing change from whiffs of antiseptics. Nothing like pampering your sense of smell once in a while.

A bed jacket, with a matching hair ribbon, is a grand gift for a woman, especially for the type who never anticipated an enforced hospital vacation.

Patients and nurses appreciate the visitor who offers to do something that will set the patient's mind at rest, something that he didn't have time to take care of before coming to the hospital. A patient will fret about a phone call that should be made, a note that should be written, a lawn that should be watered. Make the offer specific. "Are there any phone calls you would like me to make for you? Would you like me to drop a note to some one?"

A friend of mine makes it a practice to give a present of money to the patient with the understanding that it is to be used for something special, such as a radio or a telephone in the patient's room.

A small aquarium, with tiny fish and bright colored snails and water plants and sand, will provide hours of amusement for the patient. Children especially like them.

Youngsters like paper cut-out books that can be bought at little expense. A book or two, a blunt pair of scissors, box of crayons, and many youngsters are set for a busy day.

If you arrive at the hospital and find that the patient is not allowed to see visitors, or has seen his daily quota, leave a note with the nurse. It saves her the effort of remembering your name and message.

"Get well" cards are perfect for the patient who is restricted on visitors, or for any patient for that matter. Don't be embarrassed by their frivolous and superficial messages when you select them. Viewed from in bed their sentiments appear clever, witty, and profound.

Post cards are good too, especially if you can drop one in the mail every day. Arrival of a penny post card with the single item of information that you planted two begonias today, one pink and one yellow, takes on tremendous significance in a hospital room. It is a link with the world outside, a sure sign to the patient that he is not being forgotten. It gives him something to look forward to seeing when he is well again.

Something to look forward to is of psychologic importance to the patient. I knew a surgeon who had a doctor for a patient. An operation which neither of them welcomed was necessary. After the doctor had entered the hospital the surgeon invited him to his cabin for a few days of fishing when he was convalescent. "Darn you, Steve," the doctor said later, "I knew that invitation to your cabin was to give me something to count on and get well for, but it worked anyway. I kept thinking, 'Good old Steve. He wouldn't talk up that cabin so hard if he thought I wasn't going to pull through and get there!' "

Presents that hospitals do not welcome are jars of jam or jelly. Unless they can be eaten in one gulp, they provide a sticky problem for the nurse. One hospital I visited has put up a sign requesting visitors not to bring presents of this type.

When the patient is home, though, food is the inspired gift. Unless a house is equipped with a nurse, a cook, a housekeeper, and a second girl, caring for a patient and shopping and cooking can become a problem. A jar of soup or a kettle of stew convinces the recipient that you are equipped with second sight.

You will further this impression if you ask for a marketing list, accept a purse, and do the shopping. And you will establish it definitely if you invite the youngsters to a movie for the afternoon.

If the home nursing corps is distressed because the patient is cranky, remind them that a sick person is not himself and that there is a definite personality change in an ill person. Remind them, too, that it is generally the cranky patient who is on the way to recovery.

After visiting a sick person, be uninformative in answering questions concerning his condition. Your visit was not made to add to the information of the town gossip. Persons whose interest is sincere should be referred to the patient's family or to his doctor.

Abide by the fifteen minute visiting rule even when the patient is home. Tell him something amusing and let him know he is missed. Arrange a future date for doing something pleasant together. Close your visit on a happy note and leave while your popularity is at its peak!

# Motoring Safely With Children

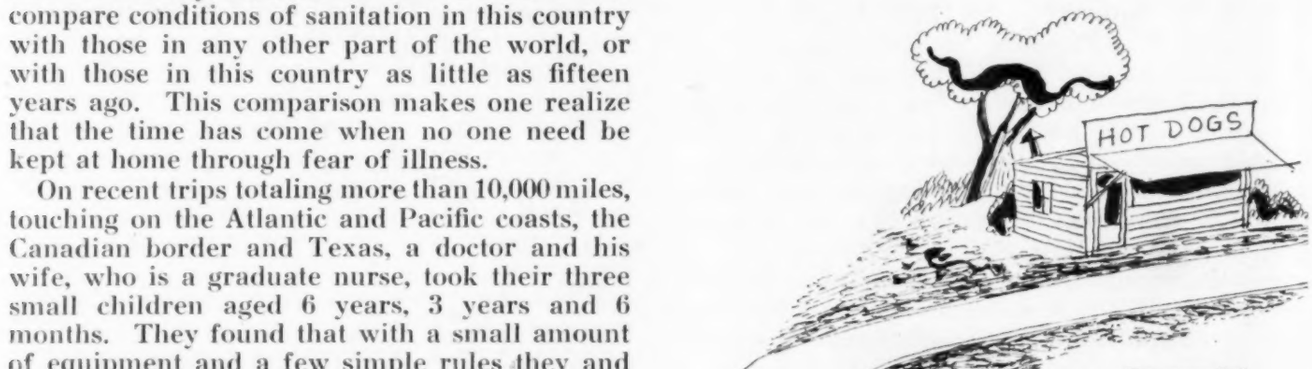
By FRANK W. NEWMAN and ELIZABETH ANDERSON

MANY people miss the joys of touring by automobile because they think it is unsafe to expose their children to the dangers of travel. This is most apparent to anyone who has recently completed such a trip with his family and enthusiastically mentions it to his friends. They ask him how he dared to do it and how he avoided all manner of nervous disorders, upset stomachs and overwhelming infections.

There are precautions to take it is true, but it would be a gross exaggeration to say that touring should only be undertaken in emergencies. Admittedly there are ways of getting sick almost anywhere in the United States. But compare conditions of sanitation in this country with those in any other part of the world, or with those in this country as little as fifteen years ago. This comparison makes one realize that the time has come when no one need be kept at home through fear of illness.

On recent trips totaling more than 10,000 miles, touching on the Atlantic and Pacific coasts, the Canadian border and Texas, a doctor and his wife, who is a graduate nurse, took their three small children aged 6 years, 3 years and 6 months. They found that with a small amount of equipment and a few simple rules they and the children enjoyed the trips and suffered no ailments that would not ordinarily occur at home. Their formula consisted of making adequate these preparations in advance, buying a small amount of extra apparatus and luggage and observing certain simple rules while on the road.

The children should be in normal good health. If there is any doubt, a physical examination is the first step. Then come common inoculations: smallpox vaccination is usually taken care of first unless a successful "take" has been done within three years. Diphtheria toxoid is given before the child is a year old and should certainly be given before touring. Many physicians now recommend that anti-tetanus "shots" be given along with diphtheria toxoid. These two toxoids when properly given provide a practically permanent immunity, one to diphtheria and the other to tetanus. The fourth which is highly recommended for most children is vaccine for the prevention of whooping cough. The last is vaccine for preventing typhoid fever. This last is the only one of the whole group which




Be careful where you eat

Take along first aid kit for poison ivy and bites

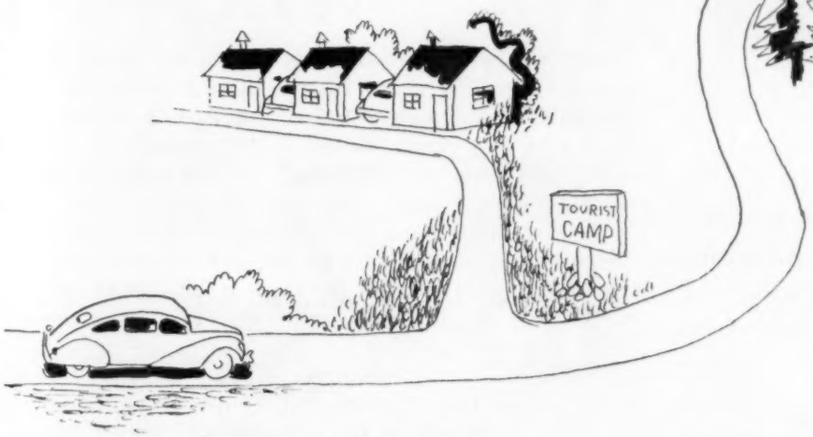
would not be routinely recommended by family physicians in most communities in this country regardless of whether one were touring or not.

Parents who have taken their children to a physician at regular intervals appreciate the importance of regularity in the child's routine, which includes his meals, rest and bowel habits. This routine for children, at least through their sixth year, can and should be continued while touring in an auto. If it has not been established before starting the trip, the parents can hardly expect to institute or revive it en route. The routine should include:

A regular bed time which allows twelve hours of undisturbed sleep at night for a child of 6 or less. Eleven or ten hours will be enough for some 6 year olds and most children above that.

An after-lunch nap of at least one hour for children of 5 years or less.

A regular morning bowel habit. The earlier in infancy this is begun, the better for both mother and child. The hour most commonly found convenient is after the first feeding of the day. If the child does not perform within a few minutes, he may be started with the help of a small rubber bulb syringe. Usually an ounce or less of warm water is enough, and often the tip of the syringe alone without water will accomplish the desired result.




**Stop at proper resting places**

A clinical thermometer, preferably for rectal use, heads the list of medical apparatus. This instrument is so commonly used by the modern parent that its indications need hardly be discussed here. The general rule followed with safety by most parents is that whenever the child appears to act or feel in any way unusual, timely use of the thermometer will decide whether or not a doctor should be consulted. If the temperature is as much as one degree above normal, it is better to consult a doctor without delay.

A rubber bulb syringe with hard rubber tip, capacity three or four ounces, is another important item. This, as mentioned earlier, is indispensable in maintaining the regularity of a child's bowel habit.

Take sterile gauze pads or a roll of sterile gauze 2 or 3 inches wide and 5 yards long for applying directly to wounds; roller bandages in 1 inch, 2 inch and 3 inch widths, three or four each; and adhesive in half inch and 1 inch widths, 5 yards long.

One should have a vacuum bottle for hot water if there is a small baby in the party. Another bottle may be a vacuum bottle to carry cold drinking water and to be filled only from sources approved by governmental agencies. This simple device completely eliminates the commonest source of intestinal infection, impure drinking water.

**Amusing and entertaining the children**

Among drugs one should take at least 50 tablets of aspirin. Half a tablet will often quiet a restless child. The use of aspirin for headaches in adults is too common to discuss here.

A 6 ounce bottle of cough mixture should also be included. This should be obtained on a doctor's prescription and should be used for emergencies, as when a child develops a severe cough and a doctor is not readily available.

The laxatives usually used by the family should be included. They are chiefly for the use of adults. Children will not need them if the earlier paragraphs of this article are followed.

Zinc stearate powder is useful for sunburn or any skin irritation but care should be taken to prevent children from inhaling the powder when it is being used. Either a cream or liquid insect repellent should also be included.

There are almost no areas safe for adults to which one cannot safely take children provided one plays according to children's rules. The rules are:

Do not attempt to travel more than 250 or 300 miles a day in the East, or 300 to 350 miles a day in the West and Middle *(Continued on page 608)*

# *Pay Attention to* THE NO TROUBLE *Child*

**Constant good behavior in many cases indicates an abnormality in some children**

***By BERNARD HIRSHBERG***

"THANK goodness Jean doesn't give me trouble," said Mrs. Green, beaming. "Jean's a good girl and plays with her dolls all day long."

"Plays with her dolls?" asked her neighbor. "Isn't Jean a little old to play with dolls?"

"Yes, how old is Jean?" chimed in another neighbor.

"Jean's 14," answered the mother, "and tall for her age, too."

"Wouldn't you think she'd outgrown her dolls at her age, Mrs. Green?"

"I don't mind it at all," said Jean's mother. "She just sits and plays with her dolls. I can leave her alone for hours. Makes it sort of nice, don't you think, to know that she's keeping out of mischief?"

"Seems to me it's a bit unnatural," put in one of the neighbors, "fourteen and still playing with dolls. I'd see a doctor if I were you, Mrs. Green."

"See a doctor about Jean? Ridiculous! Never trouble trouble till it troubles you, is my motto."

The neighbors shrugged their shoulders and walked away.

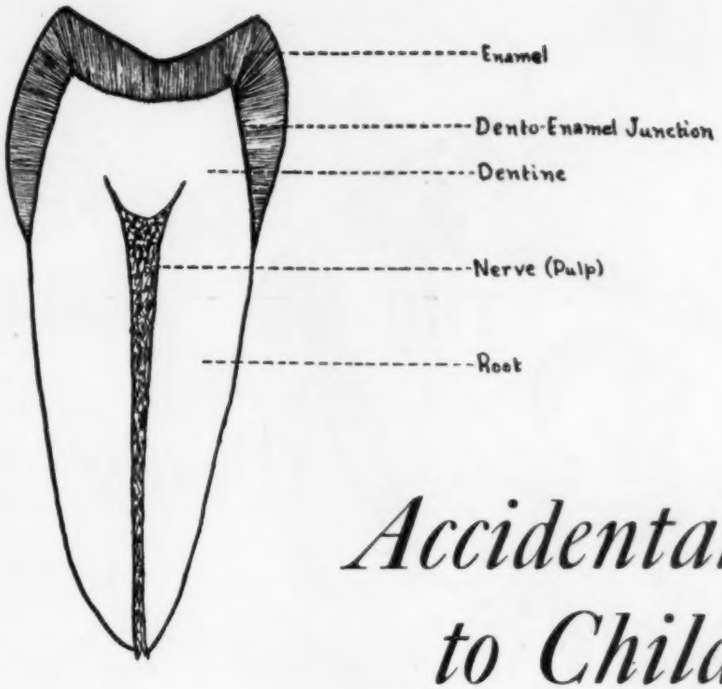
Mrs. Green resumed her own work, feeling pretty good by virtue of the fact that her daughter, Jean, was 14 and tall for her age—and no trouble at all.

But she was committing a grave error and doing the child great harm, in not ascertaining the cause of Jean's satisfaction in her dolls—at 14. Playing with dolls is an infantile trait and Jean had crossed the threshold leading into adolescence.

Parents are prone to feel themselves fortunate when their children are seen but not heard. Children who never present a problem, who never are in the way, who never scatter their clothes about the house, are the pride and joy of their parent's adoration. Yet a perfect child is an unnatural phenomenon, and parents who are not confronted by a problem about their children had better see if there isn't something the matter.

Jean's doll fixation shows definite symptoms of an infantile behavior. It is possible that she has grown up in an environment where only adults surround her. She couldn't share in the experiences of these grown-ups, nor participate in their conversation. She was alone during her formative years. Left by herself, she had to rely for amusement on the only means at hand—her dolls! This tendency to seek "companionship" in her dolls afforded the only gratification during her childhood days. Later day loyalty to her dolls may signify nothing more than that during her early years Jean had no living playmates. This would make the problem comparatively a simple one. All that Mrs. Green would need to do would be to bridge the gap between Jean's childhood—that lacked human playmates—with that of her maturing age, which normally demands its own companionship. Adolescents crave new friendships. Getting Jean to mingle with boys and girls her own age would gradually bring about a healthy transition.

There may be yet another cause for Jean's doll fixation. Her mental growth may not have kept pace with her *(Continued on page 637)*




# *Accidental Injuries to Children's Teeth*

**Common cause of accidental injuries to the teeth is falling while playing**

**By E. ALAN LIEBAN**

FEW parents have not been worried at one time or another by the fact that their child was accidentally injured. Children leading a normal life indulge in play and outdoor sports that often unavoidably result in accidental injuries to their teeth. Unless the injury is of a severe nature, not many parents pay much attention to it. Too often parents take for granted that there is nothing to be concerned about. Don't make the mistake of ignoring these teeth injuries, no matter how slight they may appear. The result of such injuries may not be evident until later and without warning symptoms.

Probably the most common cause of accidental injuries to the teeth is falling, while playing or running. Accidental injuries also occur while indulging in the active sports of baseball, basketball, bicycle riding, boxing, bowling, golf, hockey, horseback riding, lacrosse, skiing, sledding, especially coasting, and wrestling. Some children injure their teeth in automobile accidents, bumping into objects, fist fighting, or being struck by a thrown ball or missile. In these instances, the force may be received directly on the teeth or else indirectly (being struck under the chin or on the lips).

Parents should instruct their children to tell them when these injuries occur, since the majority of these accidents most frequently affect the upper four front teeth, particularly the two central incisors, where replacement is not practical. Treatment may even be necessary to save these teeth.

There are instances when teeth are injured without visible evidence. In a short time the incident may be forgotten. Let me repeat, the result of such injuries may not be evident until later. In many cases a rational diagnosis cannot be established for several months after the initial injury. Important point is to have the dentist see your child as early as possible after the injury. The dentist will arrange to see the youngster at frequent intervals to check on the tooth or teeth in question.

The crown of a tooth is the name applied to that part of a tooth covered with enamel and normally projecting beyond the gum line. When we speak of the tooth pulp we mean the blood vessels, nerve and other tissue that run in a canal through the tooth, from the end of the root to the center of the crown of the tooth. Ordinarily the pulp is called the nerve.

Through the root end the pulp is connected to larger blood vessels and a nerve whose branches supply the other teeth. In some cases the force of a blow or impact may injure the pulp to such an extent that it may die. The discoloration of the tooth that often follows is considered evidence that the pulp has died. This is not always true. If the force of a blow or impact is violent, the pulp may be torn away from the connecting blood vessels and nerve as it enters the canal through the root end. As the pulp is necessary for the nourishment and growth of the tooth, when it is severed from its connection, it dies, and if not removed, *(Continued on page 616)*

By
JOSEPHINE POYNTER

# Temper, TEMPER!

IF YOU spilled the contents of your suitcase in the middle of Main Street, you probably wouldn't scream at the top of your lungs, and spank or threaten the offending object (or if you would, you are hopeless and needn't read any further); you would probably summon all the composure possible under the circumstances and put your wits to work to extricate yourself from the situation as quickly as possible. Why then, when your child has a temper tantrum, even if it is in public, do you attack the youngster as though he, and he alone, were responsible for such a thing happening?

Too many parents lack the understanding or the technic to handle such situations. They are inclined simply to adopt the attitude that temper tantrums during childhood are a necessary evil, an unpleasant stage of development which only time will cure. If, instead, these parents realized the underlying causes of such scenes, and learned methods of dealing with them constructively, a great deal of pain and suffering might be eliminated.

It is true that temper tantrums are an inevitable part of every child's development. Between the ages of 18 months and 3 years the best of children from the best of families will occasionally fly into terrible rages, embellished with all sorts of trimmings ranging from kicking and yelling to beating their heads against the floor. Reasoning with them, distracting them, or having them sit on a chair until they are quiet are all, to some extent, helpful measures. But until the parent begins to help the child himself to control his temper, the outbursts will ordinarily continue.

As an approach toward dealing constructively with the temper tantrums which 2 year olds so magnificently demonstrate, we remember the last time we felt our own temper rushing out of control. Some of us merely bang pots and pans around in a noisy effort to vent our rage, others kick at a stubborn bureau drawer even to the extent of bruising a toe, and many of us burst forth vocally in a manner terribly similar to the child's method of expression. We all know from our own experience exactly how it feels to be rushing into a scene, against our will but powerless to stop ourselves. It's frightening; we hate to feel our emotions running away with us, and we are experienced enough to know that shame and remorse are the inevitable conclusion.

Knowing this, it should be understandable that a child screaming with rage really needs help and sympathy rather than disciplinary measures. Perhaps we can stop one tantrum with a harsh reproof or a spanking, but these methods fail to give the child any knowledge as to how to control the next angry outburst. If we are kind and sympathetic as we hold the child in our lap until he calms down; if we can enable him to understand that screaming will not get him what he wants and that he can learn to control his anger, then he probably will not grow up to be a bureau kicker.

If we can remove some of the panic and fear which his own loss of temper inspires in a child, we will be giving him substantial help for the future. It is always encouraging for him to hear, after one of his tantrums, that all children feel cross and disagreeable at times, but that they outgrow this feeling. But this form of encouragement will only be convincing to the child if his parents have achieved self control! If we scream back, use physical force or burst into angry tears, our children will only believe that such horrible behavior is a part of life and will have little incentive to improve themselves.

Little Peggy, when she was about 2 years old, employed a powerful weapon when an ordinary temper tantrum failed to achieve what she wanted. In her short experience she had never been refused anything that she wanted badly enough to scream and yell about. Her demands became so frequent that her mother suddenly said "no." So Peggy augmented her usual act by holding her breath until she turned blue in the face and fainted. The effect on the adult was all that she could have desired. Her mother, although told by the doctor that these spells were not as serious as they appeared, and that the best treatment was to leave the child

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alone until she recovered, was terrified. Consequently she started all over again, "giving in" at the first sign of a tantrum. This was a mistake and actually hindered Peggy's development. She was denied any means of controlling her rages; nobody taught her to accept delay or disappointment; and she continued to feel miserably inadequate to handle her own emotions. When she finally met a teacher who kindly and firmly denied her most outlandish requests in spite of everything she could do, she was touchingly grateful for a strength greater than her own.

Unfortunately many children have the whip hand over their parents in this way. They don't have to go as far as breath-holding because they have learned at an early age that mother can be coerced by the threat of a scene at grandma's house or in a public place.

It's a weakness on their mothers' part to allow matters to get this far out of hand, a weakness born largely of desperation and a lack of experience in coping successfully with such situations. Actually there is nothing so terrible about a child in a temper tantrum when the mother remains calm. Even in a department store or a bus, where an audience is inevitable, the mother who can summon common sense has no reason to be ashamed of being the center of attraction. It's the mother who yells and threatens and turns red in the face who has justification for embarrassment.

It doesn't take a miracle to change from a harassed, cross parent into a calm, reassuring one who has the situation under control. The best method is simply to stop and think for one moment, on the threshold of the next outburst from the youngster, "This appears to be working up to a real tantrum. I wonder how to handle it?" This objective attitude is the only thing a mother has to strive for, and it takes only a moment. The rest is handled as a matter of course by her good judgment, which is lost the minute she starts to rage. Any of us has the inherent ability to handle tactfully a child who is launched on a tantrum, but we are too apt to sacrifice this for the sake of going into one ourselves!

Some parents say in self defense, "But when Eddie is screaming at the top of his lungs, I *have* to raise my voice in order to be heard at all." When challenged, "Does screaming back at him help? Does it quiet him down?" they always have to admit that it doesn't. They seem to cling to the impression that next time, if they yell loud enough, it probably will. If those mistaken individuals would try lowering their voices as they spoke directly to the child, they would find that his natural curiosity would prompt him to stop, at least for a moment, in order to hear what they are saying. Once they have the child's attention, the rest should be easy. Different overtures are required by different occasions, but in general the attitude is, "You're awfully cross and tired, and I'm sorry. I'd like to help you, and when you stop making such a lot of noise maybe we could talk about it."

All the authorities agree that adult approval is of the utmost importance to the child. When they are lost in the throes of a temper tantrum they need this approval as a life line to help them regain control. This does not mean that, as parents, we have to indorse tantrums; but that we must not let the child feel that he has committed an unpardonable crime by temporarily losing his temper. Next time your youngster flies into a rage help him. He doesn't enjoy temper tantrums any more than you do!

## IDENTIFICATION BY TEETH

A new method through which teeth can be used as an index for the identification of nearly all of the "unknown" dead of World War II was reported recently by *The Journal* of the American Dental Association.

The system was developed by Dr. Lloyd G. Welty, former lieutenant colonel in the Army Dental Corps, and Randall R. Glasgow, former Medical Administrative Corps captain now on leave from International Business Machines Corporation.

It is based on a code for translating dental records into numbers which can be punched out at the rate of four hundred an hour on automatic machine record cards. The cards, in turn, can be screened by high speed sorters at a rate of five hundred per minute so that any individual record desired can be located mechanically in a matter of minutes.

Immediate application of the system in military service is possible because the military maintains the necessary conditions of the method—universal dental care and dental records—and uses serial numbers to identify each individual.

In sample tests with dental records of four thousand service men, Dr. Welty and Glasgow reported they were able to isolate individual sets of dental characteristics without any indication of duplication or inaccuracy. They have submitted their system to the War Department which is now engaged in locating the graves of two hundred and seventy-four thousand soldiers killed overseas.

Glasgow and Dr. Welty do not claim that their system will permit identification of all unknown war dead but point out that if it is adopted by the armed services it would reduce to a very small percentage the number of bodies of soldiers and sailors which could not be positively identified.

Dr. Welty and Glasgow also suggested that the system would be of great assistance in hazardous industries in identifying victims of violent deaths. Universal adoption of the system, they said, might eventually mean there would be no more unknown deaths.

## Health Lessons

*(Continued from page 597)*

tific biologist and Moe a clergyman who became a bishop. They met as boys and were lifelong friends. Fairy tales represented merely a hobby for them. Now Asbjörnsen the biologist and Moe the bishop are dead and forgotten. But Asbjörnsen and Moe have become immortal as the tellers of fairy tales rescued from the obscurity of the spoken word, handed down by the fireside from one generation to another. The moral of the tale of "Stupid Husbands and Shrewish Wives" is that by suggestion alone you can make a person ill to the point of death.

Once upon a time two wives began to quarrel over their husbands, the one unable to convince the other that her husband was the more stupid of the two. Said the one:

"There is not a thing I cannot make my husband believe, for he is even more simpleminded than the hobgoblins."

To which the other retorted that she could make her husband do anything she liked. Whereupon the first wife exclaimed:

"Let us see which of us can fool her husband most, for then we shall know which of them is the more stupid."

Here, at last, was a proposal over which the wives could agree. When the husband of the first wife returned from the woods, she said to him:

"Heaven help you! This is really too bad, you must indeed be ill!"

"Nothing lacking," the husband replied, "save meat and drink!"

But his wife was not to be pacified. "Worse and worse," she screamed, "you look like a veritable corpse! Go to bed, for I fear your time is short!"

The wife continued in this strain till her husband believed he was at death's door. She persuaded him to go to bed, fold his hands, and close his eyes. Then she stretched him out, wrapping him in a winding-sheet and putting him in a coffin. To make sure that he was not suffocated in it, she had bored some holes in it so that he could breathe and peep through them.

Meanwhile the other wife set herself to card, but without any wool. On seeing this, her husband exclaimed:

"A spinning wheel without a wheel is useless, but carding wool without wool is just an old wife's folly!"

"Without wool?" his wife exclaimed. "I have wool enough, only you don't see it, for it is so wonderfully fine!"

When she had finished carding her invisible wool, she began to spin with it. Her round-eyed husband exclaimed:

"But this is madness! There you sit and wear out your spinning-wheel without having anything to spin!"

"Nothing to spin!" his wife retorted. "The thread is so fine that other eyes than yours are needed to see it!"

The spinning completed and the invisible thread made ready for weaving, the wife sat herself at the loom and began to weave invisible cloth. When it was woven, she pressed it and cut it into shape, sewing a suit of clothes for her husband who admitted: "Well, well, when it is so fine, it must be like this."

One day his wife said to him:

"You must attend a funeral today for our neighbour is to be buried, and you must wear your new clothes for the occasion."

Saying which, the wife helped her husband to dress in his new clothes, for without her help he might well tear such delicate garments. When husband and wife joined the other mourners, they all became very cheerful, having partaken generously of the funeral ale. Their spirits rose still higher at the sight of the man without clothes. On his way to the churchyard, the husband in the coffin peered through one of the holes in it and then burst out laughing:

"I am blest if it is not Ola attending my funeral stark naked!"

Hearing the corpse laugh, the bearers of the coffin laid it down and took the lid off. The wearer of the invisible clothes then asked how it happened that he whose funeral they were attending lay laughing and talking in his coffin. "It were surely more fitting that he wept!"

To which the corpse replied: "Tears bring no one out of the grave!"

When the two stupid husbands had exchanged explanations and had found out that their wives had deceived them, each went home and did the wisest thing he had ever done in his life. And if you want to know what that was, then put your question to the winds.

### The Dangers of a Dirty Habit

Those of us who are still addicted to licking stamps and the tip of one finger as we turn over the pages of a book should read with a broken and a contrite heart the story—one of the earliest in "The Arabian Nights"—of the Sage Douban.

Once upon a time a king of the Grecians was afflicted by leprosy which his physicians and sages had failed to heal. At length there arrived at the city of this king a great sage, stricken in years, called the Sage Douban, who was acquainted with the properties of dried and fresh plants, the injurious and the useful.

When this sage heard of the king's illness, he attired himself in the richest of his apparel and presented himself at court, saying:

"O King, I have heard of the disease which hath attacked thy person, and I will cure thee without giving thee to drink any potion or anointing thee with ointment."

The king was extremely astonished and said:

"O Sage, hasten thy cure!"

The sage went out from the king's presence and hired a house in which he deposited his books, medicines and drugs. Having made a club with a hollow handle, he introduced certain of his medicines and drugs into it. On the following day, he directed the king to repair to the horse-course, to grasp the club, ride along the horse-course, striking the ball with all his force till the palm of his hand and his whole body became moist with sweat. "The medicine will then," he explained, "penetrate into thy hand and pervade thy whole body. When thou hast done this and the medicine remains in thee, return to thy palace, enter the bath, wash thyself and go to sleep. Then shalt thou find thyself cured, and peace be with thee!"

When the king had continued this exercise as long as necessary, and had bathed and slept, he looked on his skin, and not a vestige of the leprosy remained. He exclaimed:

"This man hath cured me by an external process without anointing me with ointment. By Allah, this is consummate science! It is incumbent on me to bestow favors and honors on him!"

There was among the king's viziers one of an envious disposition who, when he saw the king had made this Sage Douban his friend, envied him and meditated evil against him. So he said to the king:

"I have an important piece of advice to give thee! I have seen the king bestow favors on his enemy, and I therefore fear for the king."

At this the king was troubled and his countenance changed. On demanding who this enemy might be, he was told that it was the Sage Douban. When he protested the sage's innocence, the vizier replied:

"O King, if thou trust in this sage, he will kill thee in the foulest manner. Dost thou not see that he hath cured thee by external things, by a thing that thou heldest in thy hand? Therefore thou art not secure against his killing thee by a thing that thou shalt hold in the same manner. Betray him before he betray thee!"

The king believed the vizier and sent for the sage, telling the executioner to strike off his head.

"Spare me," said the sage, "and if my death is inevitable, grant me some respite that I may dispose of my medical books among which is one of especial value that I offer as a gift to thee. It contains things not to be enumerated, and the smallest of the secret virtues is this that, when thou hast cut off my head, if thou open this book, and count three leaves, and then read three lines of the page to the left, the head will speak to thee and answer whatever thou shalt ask."

*(Continued on page 612)*

# Motoring Safely

*(Continued from page 601)*

West. Straight level roads and lighter traffic in the latter areas permit faster driving with safety.

Plan for the night's lodging place not later than 4 o'clock in the afternoon. This allows time to make some choice rather than to take whatever is left; it also gives the children a chance to exercise before bedtime.

Rest one whole day in three or four to give the children a change, catch up on laundry and explore the country you are passing through.

Start the day no earlier than you would at home. It is well enough for adults to start before daybreak in order to cover a longer milage; but with children it is important to keep their normal routine. Get them up at their usual hour, give them time to bathe, have a bowel movement and eat breakfast without undue haste. If this is their routine at home, they will follow it without difficulty on the tour.

After breakfast get into the car and drive until near noon, making one or two stops for gasoline, drinks and comfort. Carrying drinking water in the car will avoid the necessity for more than one or two stops. In this way, it is not difficult to travel from 100 to 150 miles before noon.

After a leisurely luncheon or dinner, drive again as in the morning for three or at most four hours, making one or two stops. Children under 5 will probably nap during the first hour or two. This can be arranged for as many as three children at a time, provided the total number of passengers is not more than five.

A baby of 1 year or less sleeps in his combination bed-chair of which several varieties are obtainable at any department store. This device usually clamps to the back of the front seat and may rest on either the front or rear seat. If the child is active and able to crawl, he should be strapped in or watched lest he fall out.

A child of 5 or 6 can lie down on the front or back seat if not more than one adult shares the seat with him. He will either bend his knees or get the cooperation of the adult sharing the seat and rest his head or his feet on the lap of the adult. It proves more comfortable than it sounds for the average child.

A comfortable bed for a child of 2 or 3 can be arranged in the "leg space" between the front and rear seats on one side of the car. Fill the space with luggage almost to the level of the rear seat and then lay a crib mattress, size about 18 by 36 inches, over the top. The remaining leg space is still enough for one adult. Unless an adult is there, this plan would not be practical since a bit of rough road could dislodge the child from his bed. The arrangement has the additional advantage of utilizing small articles of baggage and has proved entirely satisfactory on many occasions when three children wanted to sleep at the same time.

The properly rested child is rarely bored, is vastly easier to manage and a better companion on a long trip. Long naps in the afternoon and an occasional nap in the morning help pass the time and keep the child and his parents in a mood to enjoy the trip.

Emphasis should be placed on continuing what the child has been accustomed to have at home. If changes are made in meals they should be toward lessening the amounts of food and increasing the fluid content.

For babies under 1 year, the easiest and safest formula to make while touring is from irradiated evaporated milk in tins. By starting out in the morning with a tin of milk, a sterilized bottle and nipple, a thermos of hot water and a can opener, the mother can feed the baby on schedule and not require an extra stop. If the baby is old enough to take cereal and strained vegetables, these can also be carried in the car, mixed with a little of the warm formula and included in the meal without stopping the car. Even a ripe banana can be mashed in a clean cup and given to the baby with his bottle without inconveniencing anybody.

Unless one is eating in a first class restaurant, he should avoid ground and chopped meats, fowl, fish, salads and other cold dishes which have been prepared or refrigerated under questionable conditions.

Fresh fruit is recommended at least once a day for everybody; but it should have the outside scrubbed or peeled to remove the poisonous sprays and contamination from handling. Avoid pastry containing custard or cream fillings unless you are absolutely sure of their freshness. Use only pasteurized or tinned milk.

Most of our well traveled routes have a variety of hotels and tourist camps from which one may select without great difficulty the one which suits his taste and purse. Caution along certain lines will prevent serious mistakes.

Avoid private homes unless you know the inhabitants well enough to be sure there are no open cases of tuberculosis, typhoid carriers or other infectious persons. Public hotels and camps are usually more strictly supervised than private homes.

Investigate the places where the children will play to see that they are not too near traffic, poison ivy or woods where ticks may be encountered. Avoid noisy areas such as those near railroads, busy corners, and carnivals.

Too much emphasis cannot be placed on the need for keeping the children well rested if they are to be happy and easily amused. Next in importance comes the need to see out of the windows of the car. Small chairs as well as combination bed-chairs are sold in department stores. The child can sit in one of these devices, safely strapped in, and see the ever changing scene. Games which require no equipment are available for all but the tiny tots. These games usually consist of an attempt to guess what object or person one of the occupants of the car is impersonating or thinking of. License plates of other cars with their variety of colors and numbers provide a source of amusement for hours at a time among older children. Awarding five points for a red license, four for a black one and so on is perhaps the simplest variety, the points going to the person who sees the license first. In the same way points may be awarded for seeing animals, the less common ones having higher ratings. For smaller children, a few of their favorite story books, coloring books and a set of crayons will pass the time. Pinwheels and balloons are amusing to small boys especially. Modeling clay is fun for everybody.

The most obvious and at the same time the most profitable source of interest, at least for older children, lies in the historical and geographic significance of the area through which the car is passing. Abundant literature is now available in almost every public library from which one can learn in detail the intimate history of every corner of the United States and Canada. To mention that its study is rewarding to a gratifying degree seems too obvious to print; but it is safe to say that nine tourists out of ten are blissfully ignorant of everything but the number of miles covered since the last stop.

The baggage capacity of the car should be measured before buying new luggage. If sufficient bags are already on hand they can often be made to fit in, but large spaces may be left around the ends and sides of the trunk space. Utilization of these spaces is important if one is to take all the needed articles for each of two or three children. Two or three laundry or duffle bags filled with unpressed clothing like sweaters, raincoats, stockings and soiled clothing make good use of them. Another helpful, though rather idealistic plan is to have a separate suitcase for each child's things; this is the simplest way of classifying a large number of articles and making them easily available on short notice. As mentioned before, one or two small pieces of luggage may be fitted into the leg space of the rear seat compartment on one side. They should contain the articles needed while riding, such as bottles, tinned milk and tinned vegetables for the baby, books, crayons and scissors for small children, comb and brush, facial tissues and water bottles for all the family. Last but not least, take one good wool

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There would be no part of the skeletal structure . . . no organ . . . no tendon, muscle and nerve . . . no artery and no vein . . . no tissue or cell without these luminous points in fixed positions. For protein is part of all of them.

Millions and millions of these luminous points would be seen traveling through the blood vessels, marking the protein in the red and the white corpuscles of the blood. The blood plasma, the fluid in which the blood corpuscles travel, also would be radiant with protein.

The glands, too, would present an interesting picture. The thyroid, for instance, would be seen secreting its hormone—thyroxin—into the many small, apparently tightly walled-off spaces which honeycomb the tissue of this gland; the hormone would sparkle with luminous points, indicating that protein is part of its composition. Soon these luminous points would be seen traveling through the walls of the gland, and eventually they would appear in the blood stream, on their way to each individual cell.

Epinephrine—the hormone secreted by the adrenal gland and so important in the regulation of blood pressure—would also be revealed as a protein derivative.

Insulin, manufactured by the pancreatic glands in the abdomen, too is largely of the nature of protein in its make-up.

Only from the foods eaten can man derive the protein needed for tissue repair and maintenance, and for the many functions of the body in which protein plays an important part.

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The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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blanket. Most of the time this will stay in the rear trunk, but when needed it is most welcome, and in the closed car will be found adequate for all but wintry weather.

Carsickness runs in families and is more severe between the ages of 4 and 12 years. It can be prevented or lessened in severity by driving slowly on straight level roads, supplying the child with hard pure candies to suck slowly between meals when driving, providing light meals consisting chiefly of starches and sugars (especially avoiding fats), and encouraging the child to sleep after each meal.

If one follows these simple rules it will be found that motoring with children can be a delightful and entertaining mode of travel.

## Accidents in the Home

*(Continued from page 587)*

moving fan. Young children can't be expected to keep away from danger. A child of 3 or 4 years doesn't really know what danger is—he wouldn't think twice about thrusting his fingers into a fire, or touching a sizzling frying pan. Nor does a baby know that he runs the risk of strangling himself if he gets entangled in his sheets. A child should be kept away from the stove when something's cooking. If he must be in the kitchen, his mother should watch him constantly. A baby's sheets should be pinned tightly to the side of his crib so that he can't slide underneath them. You can't expect a baby or even a 5 year old to protect himself from accidents. It's up to his parents to keep him out of trouble.

It's a parent's job to see that all window screens in the house are kept latched. Then there will be no heartaches and regrets because a child leaned on a screen that gave way. Screens should be inspected, too, to ascertain that there are no weak or torn wires and that the frames are in good repair.

If you have a back yard, or a front lawn, or any small play space near your home, you can be sure your youngsters will name it their headquarters. Make certain they're headed for fun, not for trouble—by keeping the space free of broken glass, rusty nails, old boards or anything else that may cause an accident. If there's a swing, check the ropes or chains every so often. Replace defective ones immediately. Don't think they'll "last" for another season. Do the same for broken outdoor furniture, porch steps and railings. True enough, they may last to the end of the season without causing a mishap. But why flirt with danger, when a hammer and some nails may be all that's needed to repair them?

All tools should be put away when finished with them in order that a child doesn't bruise himself with a hammer or try tasting a few long

nails. Follow this rule with garden and lawn tools, too. You'll be sorry you left a rake or a hoe lying on the grass, if you should stumble on it some night. It takes no more effort to hang the rake on a hook or wherever it belongs than to throw it on the ground. Should you spray your plants with an insecticide, put it away in a safe place when you finish using it.

Of course, all your precautions won't guarantee your family total immunity from cuts and bruises this summer, especially if there are young children in your house. If they play hard, they're bound to come home with a scratch or two now and then. You may as well expect and be ready for it, too, by having the proper first aid equipment available. The lowest shelf of your medicine cabinet is an ideal place for it. If it's needed in a hurry, every one will know where to find it.

I've been talking about making back yards and front lawns safer places. Many of you don't have this task because you don't have a yard or a lawn to use as a playground. Instead, though, you can send your children to the nearest public playground, where there's plenty of space to play and other children for companions. Best of all, there's an adult there to watch your youngster and see that he is safe. The city's playgrounds offer facilities ranging all the way from sandboxes for tiny tots, to baseball diamonds and parallel bars for the gymnasts who live in cities. You and your children have a choice of many playgrounds that are operated by various city departments. Or perhaps your boys and girls might prefer swimming in a city pool. They are well supervised there too.

Don't deprive your child of a day's fun at the playground or pool because you're afraid he won't be home when you want him. If you tell him to "stay right in front of the house where I can see you," you know as well as I do he'll soon be playing in the street. And then what if a speeding car should be passing by just as he is dashing out to retrieve a ball?

You don't need a crystal ball to tell you that your child may be headed straight for an accident if he plays on the street in front of the house—or that he'll get his fingers mangled if he toys with a spinning electric fan. It often takes just a little carelessness to bring on an accident, and on the other hand, a little foresight can prevent one. Accidents rarely occur for no reason at all. They happen because some one made them happen. Don't let that "some one" be you.

**KNOW YOUR LOCAL HEALTH DEPARTMENT**

**By MARTHA LUGINBUHL**

***Coming in HYGEIA***

## Helpful Modern Points of View

**Presented with the hope this will be interesting and helpful to you**

### *Getting children to come in willingly from play after supper*

Quite possibly you are confronted by the problem of how to get children in from play in time for some pre-bedtime relaxation. If so, you might welcome these suggestions made by an expert on child guidance.

**You may find** that much of your solution lies in a *planned* program for the child's day—cooperatively arrived at by both you and your child. First allowing play hours to coincide as much as feasible with those current in your own neighborhood, together you might decide on a particular hour when your child will regularly come in. Then as a real reason for your child's abiding by this plan, it has been found generally effective if you can plan to spend time with him playing quiet games, reading, or enjoying not-too-exciting music or story records, etc.

**Since enforcement** of any rule usually comes more easily when there is a background of mutual understanding and reason, and since you have offered your child in this manner a real inducement for coming in, you may find him quite willing to abide by such a planned program.

**This information** is based on studies of child behavior by Dr. Gertrude Driscoll, child guidance expert and assistant professor of Education at Teachers College, Columbia University.

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*(Continued from page 607)*

At this the king was excessively astonished and shook with delight. On the following day the sage brought the king an old book and a small pot containing a powder. A tray having been brought him, he poured the powder on to it, spreading it out. He then said:

"O King, take this book and do nothing with it till thou hast cut off my head. When thou hast done so, place it on the tray and have it pressed down upon the powder. When this is done, the blood will be staunched. Then open the book."

The sage's head having been struck off, the king opened the book and found that its leaves were stuck together. So he put his finger to his mouth and moistened it with his spittle. Then he opened the first leaf, the second and the third, but only with difficulty. He opened six leaves, but found no writing on them. So he said:

"O Sage, there is nothing written in it!"

The head of the sage answered: "Turn over more leaves!"

The king did so, and in a little while the poison penetrated into his system, for the book was poisoned. The king fell back and cried out:

"The poison hath penetrated into me!"

Upon this, the head of the Sage Douban repeated certain verses denouncing injustice, ingratitude and the abuse of power. Whereat the king immediately fell down dead.

### Foretaste of the X-Ray

During the last world war, the vision of aviators by night was improved by the administration of the appropriate vitamin. And, of course, x-rays were invaluable in the early recognition of disease. But these devices were long ago foreseen by our ancestors, witness the following tale which appeared in a collection of Scottish fairy tales edited half a century ago by Sir George Douglas.

His is the tale of Sir James Ramsay of Bamff, banished from Scotland, with a price on his head. Sir James seems to have been a rather reckless fellow, for he had not lived abroad long when he found himself on the point of starvation. Walking one day in a wood, he met an old man with a long beard, respectable-looking and well dressed. Looking hard at Sir James, the old man commented on his appearance of ill health, adding that he himself was a doctor, and that if Sir James would say what his symptoms were, he might possibly be able to help him.

Sir James replied that he was not ill, but in want of food; and that all the medicine he needed was to earn his living as a gentleman. The old doctor then undertook to accept Sir James as an apprentice, to live in his house and to learn his profession.

After Sir James had been with his new master some time, he was told of a most wonderful medicine. Its ingredients could be found in a river in Scotland by some canny person who knew that part of the country well. Sir James said that no one knew this part of the country better than he did, for it was on his own estate of Bamff. For his master's sake he would willingly run the risk of returning home to seek this medicine.

The old doctor then explained how Sir James was to go to a part of a river where there was a deep pool. Here he was to hide himself behind some big trees for three nights while the moon was at the full. He would see a white serpent come out of the water, go up to a big stone, and crawl under it. He was to watch till it came out again, catch it on its way back to the pool, kill it, and bring it away with him.

Sir James did as he was bidden and on the third night he caught and killed the serpent.

On his return with the serpent to his master, Sir James was told to cook it till it turned into oil. If anyone saw him at his work, or if he tasted the stew, the charm would be broken and he would be killed.

Sir James cooked the serpent, but as he was pouring the stew out of a pan into a box, he let some drops fall on his fingers which were scalded. In his pain and hurry he forgot his master's order and put his fingers in his mouth to stop the pain. Far from being killed he found his eyes were opened, and he could see through everything.

When the old doctor came to see if the medicine was ready Sir James found he could see through his master and tell what was going on inside him. He kept his secret, and this was lucky, for he soon found out his master was a bad man who would have killed him had his knowledge of the secret of the medicine come to light.

So Sir James learned to be a skilful doctor and, escaping from his master, he travelled all over the world working many wonders because he could clearly see what was wrong inside folks' bodies. Longing to return to Scotland, and thinking that nobody would know him as a doctor, he made his way home to find the king very ill, though he had tried all the doctors in Scotland.

At last the king offered his daughter in marriage to the man who could cure him. Whereupon Sir James went to court and asked leave to try his skill. As soon as he came into the king's presence, he saw there was a ball of hair inside him which no medicine could touch. Such a ball of hair is now known as a "trichobezoar." The king having consented to an operation, he was put to sleep so fast that he did not awake till Sir James had cut out the ball of hair.

Sir James now felt free to disclose his identity, but the king was so pleased with him that he received not only the royal pardon but also the king's daughter in marriage.

# Select Baby's Foods With the Same Care As Your Own . . .

## *Judge The Flavor, Color and Texture!*

● **Quality, of course,** is your first consideration when buying baby's food—but *flavor* is mighty important, too. On both these counts Heinz Strained Foods score high. They're prepared to quality standards that have been a Heinz tradition for 77 years. And these foods are scientifically cooked and vacuum-packed to retain delicious flavors and a high degree of vitamins and minerals important to baby's health.

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● **Baby's introduction to cereals** influences his later attitude towards other foods. So give him fluffy, light-textured Heinz Pre-Cooked Cereal Food—a delicious blend of three select grains fortified with extra nutritive elements!

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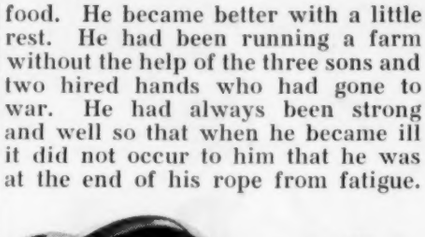
Gleaming white porcelain with patented "Longlife" heating element that automatically shuts off when water is evaporated. Safe, sanitary; wash with the dishes. No wires to short circuit. AC current. Uses standard appliance cord.

ELECTRIC STEAM RADIATOR CORP.
Detroit 8, Michigan

## War Casualties

*(Continued from page 585)*

food. He became better with a little rest. He had been running a farm without the help of the three sons and two hired hands who had gone to war. He had always been strong and well so that when he became ill it did not occur to him that he was at the end of his rope from fatigue.



**Women's morale low**

"Many physicians on the home front have given their lives to the war effort. Many who knew that they shouldn't be working day and night carried on from a sense of duty till they died. Only recently the two doctors left in a small city fell dead, one at the age of 46 and the other at 54. For four years they had worked all day and half the night."

"Can you help these people?" I asked. "Is there anything they can do to help themselves?"

"Yes," said the doctor, "many can be helped and many can cure themselves. The man who is breaking down from overwork must be made to see that it would be only a disservice to his company to continue until he breaks completely. The thing to do is to relax and rest while there is a probability that he may recover. If he works until he cannot go a step further, he may be finished. It may be a year or more before he will be of any use. Some persons recover sufficiently to carry on if they return to eight hours a day and stop the night work which is so destructive of health. Others can get their grip again if for a time they work half a day, and take some medicine at night to help them sleep.

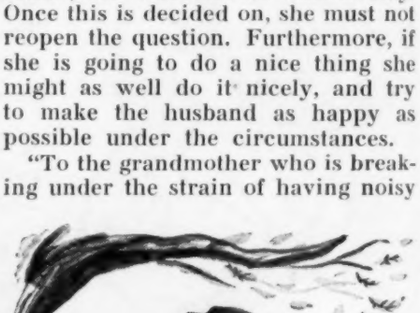
"Many an executive must be made to realize that his health and future effectiveness depend on his ability to learn to delegate authority and responsibility. It is said of former President Vail of the Telephone Company that whenever he found one of his executives just sitting and thinking, with no papers on his desk, he raised his salary. His idea was that the best man was one who knew how to delegate so much of his work to assistants that he had time in which to think and plan ahead.

"Many a tired man not only makes himself much more tired and inefficient, but demoralizes his staff by frequently flying off the handle and needlessly dressing down good employees and subordinates. Other executives, too tired to make important decisions, won't let their assistants make them, and would be of more value to their company if they retired or went out fishing. They are only obstructing or coasting. In many cases a man who is half crazed with overwork should go to his superiors and tell them that somehow or other he must be given help and a vacation; he shouldn't carry on uncomplainingly until he drops.

"In many cases a tired person begins to feel rested after he is assured by his physician that a careful examination has revealed no sign of serious disease. At least then he does not have to worry any longer about cancer or other such serious disease.

"To the woman who is ill because she cannot make up her mind what to do about an unhappy marriage that was unhappy before the husband left for war and is even more distressing now that he has returned, the advice must be for her to definitely make up her mind. Usually if there are children and the man is willing to remain and be a good father, the wife will do well to stay. Once this is decided on, she must not reopen the question. Furthermore, if she is going to do a nice thing she might as well do it nicely, and try to make the husband as happy as possible under the circumstances.

"To the grandmother who is breaking under the strain of having noisy



**Farmers need help**

youngsters about I often suggest that the best use for spare funds, if there are any, is to help the daughter to get an apartment of her own. Until this can be secured the mother and daughter will do well to alternate running the house on different weeks. This will eliminate many sources of friction. The one not on duty must refrain from offering the other advice or exhortation or criticism!"

As I left the doctor and went thoughtfully homeward I began think-

ing of those many poor women whose beloved husband did not return from the war, but remains buried somewhere on foreign soil, with a little white cross near his head. As such women sit in loneliness, peering into a future that seems hopeless and purposeless and hardly worth living, I wondered if some might not be helped by the thought of Blind Raftery in Donn Byrne's beautiful story. As the blind bard said:

"We are born and die and then are immortal. But death is not (only) the quiet sleep that comes at the end of life . . . There is (also) a death in life, as came to me when was taken from me the sight of my eyes . . . and we sit a little while by ourselves in an apart dark place, and we learn truths, of how certain things one believes to be good are but vulgar selfish things, and how certain things the small think evil are but futile accidents. As we learn to be kind such wisdom comes (as comes) when we are dead. And those who have never died in life—are pleasant shallow people."

Clearly, what the great blind poet meant was that it can be a wonderfully fortunate thing for a man or woman to die some time in life if only the terrible experience puts an end to thoughtlessness, complacency and selfishness, and a beginning of a new, finer, kinder, more thoughtful and more useful way of thinking and living.

## Are Colleges Inadequate?

*(Continued from page 593)*

opment of a student's affective nature is no less important than it is in the development of his ideas and intellect. Unhappily many students have not been taught the supreme value of the ability to express themselves easily and well, or to have a wide and fairly intimate knowledge of great literature.

Emphasis on the spectacular accomplishments of science has focused the attention of youth to that field. Science departments in colleges and universities are naturally pleased about this fact. Nevertheless, the purpose of a college worthy of the money donors and taxpayers put into it, should take care of the entire student. Men and women are more than intellect, more than body. It should not be amzing to find that the three great reports on education which have been released within the last year—the Harvard Committee Report, the Yale Report, and that of the Catholics—all devote attention to the importance of religion in a free man's education. We must have men and women who are men and women first, then scientists, engineers, doctors, yes, then teachers.

Each one of these fields, like other occupations, requires a man who is balanced emotionally and who has not had his affective nature crushed or disrupted.


# AN INVITATION TO BEAUTY

We cordially invite you to discuss your beauty potential with the Cosmetic Consultant who distributes our products in your community. Beauty, we feel, is an intimate subject—one that is best discussed in the privacy of your home.

Too often, we are inclined to take ourselves for granted. It somehow escapes us that our outward appearance reflects our personality, our individuality, our ideas; that it is wonderfully adaptable to change, to improvement. We have a tendency to regard our physical aspects for all the world as though they were the drapes in the living-room which we intend to change one of these days, when we get around to it, for something more up-to-date and colorful. We put it off and put it off—and why? Could it be that the inertia of habit is hard to overcome? Could be.

An intelligent self-appraisal is a tonic for the soul; and since Spring is the legendary season for tonics we feel that such an appraisal is definitely indicated.

Seeing ourselves as others see us helps immeasurably to arrive at that all-important detached viewpoint without which the art of self-improvement is greatly hampered. And it is here that the Cosmetic Consultants who distribute our products can be of real service to you; for, in effect, you see yourself through their eyes, aided by our Selection Questionnaire which, as it is answered, unfolds a word picture of your type and condition of skin and of your coloring, viewed cosmetically.

Since the outward appearance reflects the inner woman, every care should be taken to fulfill its beauty potential.

A card addressed to Luzier's, Inc., Kansas City 3, Missouri, will put you in touch with the Cosmetic Consultant in your community. It will be her pleasure to help you select beauty preparations suited to your individual requirements and preferences, and to suggest how they should be applied to achieve the loveliest cosmetic effect—your beauty potential.

**Luzier's, Inc., Makers of Fine Cosmetics & Perfumes**

KANSAS CITY, MO.

Expectant Mothers

SHOULD KNOW ABOUT

Baby-All NATURAL NURSER

Like most expectant mothers, you will soon be buying baby bottles and nipples. Isn't it wise to buy only the brand that will give your baby greatest protection?

We mean, of course, Baby-All Natural Nurser. You see, your baby's bottle can't become contaminated when you use Baby-All Natural Nurser properly. The breast-shaped, one-piece, "no-colic" nipple screws onto the bottle quickly, without fingers touching the nipple — and baby can't pull it off!

Each Baby-All Natural Nurser set includes a screw-on "no-colic" nipple, bottle, and cap to seal formula safely in refrigerator or while traveling.

PYREX or DURAGLAS BOTTLE

*Approved by Medical Profession*

Sold complete at Infant Departments or Drug Stores

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*Put Baby in the*

"Boodle Buggy"

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Daddy's back and you're going places again! The Welsh Easy-T-Turn Boodle Buggy converts into a wonderful Travel Bed. Folds, packs and stores easily. Change from Bassinet to Carriage quickly!

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*Send date of your baby's birth to the Welsh Co. for a free horoscope.*

1535 S. Eighth St., St. Louis (4), Mo.


## Children's Teeth

*(Continued from page 603)*

eventually will decompose. The bone and soft tissue at the root end of the tooth may become infected and destroyed and an abscess may form. This abscess may fill with pus and cause a swelling or else may work its way through the bone and gum, forming a gum boil which breaks and periodically discharges pus. When a swelling is present the tooth becomes loose and sore to the touch.

Fractures of teeth, like those of other bones, may be simple, where only a portion of the crown is broken off. Sometimes the fracture nearly exposes the pulp, leaving the protecting surface so thin that it causes the pulp to respond painfully to heat and cold, sweets or acid fruits and the breathing of cold air. Compound fractures are those in which a portion of the crown is broken off, leaving the pulp exposed. In severe injuries the root of the tooth may also be fractured. Compound fractures should be immediately attended to before further complications arise. Often this happens to a young permanent tooth and if neglected may result in its loss.

Teeth may be loosened or forced into the upper jaw without fracture or laceration of tissue, or they may be completely knocked out of their sockets. If immediate and competent attention is given, even though a tooth is completely out of its socket, it can be put back and successfully retained. The tooth or teeth knocked out should be kept as clean as possible, until the dentist is visited. The time element is an important factor in these cases. The foregoing condition may or may not be accompanied by laceration of the surrounding tissues.

Depending on the age of the child, the tooth may either be a baby or permanent one. By the time the child is 1 year of age, the eight incisor teeth, that is the four upper and four lower front teeth have erupted. At 18 months the root formation of these teeth is virtually complete. Under normal conditions these teeth should remain in the mouth until replaced by the permanent teeth. The latter are located above the roots of the baby teeth in the upper jaw, and below the roots of the baby teeth in the lower jaw.

The permanent upper central incisors or two upper front teeth generally erupt between 7 and 8 years of age. The two upper lateral incisors, or the teeth on either side of the two front teeth, generally erupt between the ages of 8 and 9. The two lower central incisors, or the two lower front teeth, generally erupt between 6 and 7, while the two lower lateral incisors, or the teeth on either side of the two front teeth, generally erupt between the ages of 7 and 8. It is important that parents know these facts. Roots of either the baby or permanent teeth are not completely formed at the time the teeth erupt. A root will not complete its formation, once the pulp dies or is removed.

Remember that baby teeth are liable to all the diseases of the permanent teeth and their systemic effect may be as serious. Injuries to baby teeth should be attended to, not alone from this viewpoint, but also from the possible effect their loss may have on the eruption of the permanent teeth.

Parents may be consoled by knowing that if the crown of a permanent tooth is fractured, such as a corner or biting edge of the tooth, the portion broken off may be restored. Where the broken portion of the crown is quite extensive, the tooth may eventually be restored with a porcelain jacket crown, which completely covers the fractured crown and has the appearance of a natural tooth.

I would like to remind parents that children may fear the dentist, because they have been too often frightened by thoughtless remarks of their elders in speaking of the dentist. We must remember that children are extremely impressionable. Your dentist will take every precaution not to cause the child any pain and to gain his confidence. Take your child to the dentist at least once every six months, so that they may become good friends. This friendship may actually be the cause of your child having a sound set of teeth when he reaches maturity.

## HIGHWAY DEATH TOLL

America is losing its postwar race with death on the highway, the National Safety Council reported recently. Traffic fatalities in April climbed above the April figures for 1941—a year that set an all time high for the nation. The April 1946 traffic death toll reached 2,650. This was 47 per cent greater than the 1,800 deaths in April a year ago, and 1 per cent more than in the same month of 1941.

The traffic death record in 1941 was 40,000—highest in the nation's history. At least 38,000 Americans will be killed in traffic this year, the council estimates.

"If the nation can't use sanity behind the wheel in ordinary driving, it is frightening to think what the toll will be when war weary pleasure seekers start out on vacations and summer holiday celebrations," said Ned H. Dearborn, council president.

"The United States apparently is drunk on gasoline—a tanked up country unable or unwilling to use its new travel freedom with temperance. Unless we sober up, and quickly, the nation will place a dark blot on the bright pages of its history written during the war. It is inconceivable that we should win a war to give our fellow men life and freedom, and then snatch it from them by carelessness behind the wheel of an automobile," added Mr. Dearborn.

# Bulbsnatching's not up Allen's Alley!

FRED, you can get away with a lot of things on your program. But don't try bulbsnatching! That leaves folks in the dark. And worse still, that little habit of swiping a light bulb from one socket to fill another leads to accidents and eyestrain.

It's sort of silly, too, when good G-E lamps cost so little and last so long. That's because for 60 years General Electric lamp research has been working with one idea in mind . . . to make G-E lamps Stay Brighter Longer. As a result, G-E lamp bulbs today give you more light for your money than ever before.

Isn't that right up *anybody's* alley? So see your G-E dealer, and stock up on G-E lamp bulbs today!

*Be sure to tune in when* **THE FRED ALLEN SHOW** *returns to the air this Fall*

## Pregnancy

*(Continued from page 583)*

stages and we thought perhaps you would come again since we can't do it all at once. I don't want to know everything that you know, but just a little so I won't feel so terribly ignorant."

"I'm delighted!" Dorothy answered. "I've always thought one of the most fascinating phases of human existence is overlooked by many in the world. We study everything about ourselves—our religions, histories, cultivated sciences—but we do not explore the most interesting field of all, life before birth.

"But is there to be a dinner tonight in this household? I am starved—and you promised me all the things I like best to eat."

Marion laughed. "I will have it ready in a moment. Everything is prepared and I have been too interested in listening to you."

After dinner Marion brought in John's drawing board, paper and pencils, and placed them beside Dorothy.

"Now is the time to tell us what you know and show us if you can draw," she said. "I saw the shacks, boats and palm trees you sketched when in Florida last year, but I want to see now if you can draw babies. An illustrated chalk talk on a small scale is what I would like."

"Let's begin with the two little individual cells," said Dorothy. "These are known as an ovum and a spermatozoon. The ovum, another name for egg, contains the mother's share of the material which goes into the creation of the new baby. When a girl reaches her early teens, some of the ova in the ovary begin ripening and one is expelled from the ovary each month. In spite of the fact that almost a half million are present, not more than four or five hundred become mature and have an opportunity to share in the creation of a baby. The others remain behind, but are important, too, for they help produce the hormones which give a woman many of her feminine qualities.

"The second of our two little cells which enter into the makeup of the baby is known as a spermatozoon and is contributed by the father to his child. Spermatozoa are formed in the testes but none are present at birth and none are produced until the boy is about 14 years old.

"When a boy reaches the time of sexual maturity, some of the cells which were in the testes at birth begin to multiply and keep on multiplying until he becomes an old man. Original cells remain in place but the new cells which are produced pass out of the body in the semen. Normally hundreds of thousands of spermatozoa are produced daily for a period of forty or fifty years."

"This sounds as if a man could be a father at a much older age than a woman can be a mother," commented John.

"Yes, that is true," answered Dorothy. "Since the father is not as intimately concerned with the development of the baby after it is once conceived, it is not so important that he be young and vigorous.

"The hormone that gives a boy his masculine characteristics comes from the testes. At the age when it is first produced in large amounts, the boy's voice changes, facial and body hair coarsens, the boy becomes a man and this same hormone maintains his masculinity throughout his life."

"But what do the ova and the spermatozoa look like?" asked John. "Has any one ever seen them?"

"Yes, indeed," answered Dorothy, "but it takes a fairly high degree of magnification to get a good look at them. The ovum is almost round. It is covered on the outside with a thin membrane and the interior is made up of jelly-like material known as cytoplasm. It contains a smaller ball-like mass on the inside that is known as the nucleus.

"The spermatozoa are much smaller and each is made up of two parts. The principal portion is known as the head and corresponds to the nucleus of the ovum. It is somewhat conical in shape and attached to its base is a threadlike tail which makes movement possible."

"How fast do they move?" interrupted Marion. "If they are so small it must take them a long time to get anywhere."

"They don't need to go far," answered Dorothy. "It is only a few inches from the vagina to the fallopian tubes and they probably make that journey in less than an hour. Thus, when spermatozoa are deposited in the vagina they move rapidly upward through the uterus and are out in the fallopian tubes within a short time. When the ovum leaves the ovary it moves slowly downward through the fallopian tube. If no male cells are present it dies and disappears without ever reaching the uterus. If spermatozoa reach the egg while it is alive, many push against it from all sides. When one successfully penetrates the outer wall, a change occurs in the surface and no more can enter. If more than one did enter, death of the ovum would follow. When a spermatozoon has successfully entered a living egg, fertilization is said to have occurred and the first stage in the development of the baby has been accomplished.

"We have been talking about spermatozoa and ova as cells," Dorothy continued. "I have been taking it for granted that you know what cells are. Do you?"

"Rather vaguely," said Marion. "There are cells in a honey comb—"

"And cells in a battery," added John.

"They are not much like the cells I am talking about except that they are made up of a wall enclosing a liquid-filled cavity, and that is about what living cells are.

"All living things, both plant and animal, are made up of one cell, a few cells or a tremendous number of cells. The ameba and bacteria and many of the algae that make the green scum on the lakes during the dog days in the summer are forms of life whose whole being is encompassed in a single cell. Our bodies, on the other hand, are made up of millions and millions of cells.

"Practically all cells are so small that they cannot be seen without a microscope and each consists of a nucleus embedded in jelly-like cytoplasm and is surrounded by a thin membrane—the pattern is much the same as in an ovum.

"Growth is brought about by an increase in the number of cells. During early life when growth is rapid, all cells divide frequently. When growth is slower, or has stopped, cells divide only to replace those that are worn out or accidentally destroyed."

"Do all parts of the cells divide," asked Marion, "or do little pieces split off?"

"Cells divide into two equal halves. Nature has devised an intricate mechanism in order that each new cell may contain exactly half of everything that was in the old one.

"Within the nucleus of each cell there are hundreds of thousands of particles known as chromatin. When a cell is ready to divide the nuclear membrane disappears and all of the chromatin particles arrange themselves in the form of a chain. The chain is longer than was the circumference of the nucleus and it usually looks tangled like a piece of knitting yarn. This chain then breaks into a specific number of pieces, the number depending on the kind of plant or animal to which the cell belongs. In human beings the chain always breaks into forty-eight pieces and although the number varies in different species, it remains constant in the same type of animal. Each one of these pieces is known as a chromosome.

"Consequently, when an ovum and a sperm cell unite to form a single cell from which a new baby will develop, each, at the time of union, must contain only twenty-four chromosomes in order that their combined number will equal forty-eight.

"In order to reduce the number of chromosomes, the ova and sperm cells undergo a special type of division. The chromosomes do not split but, instead, twenty-four whole chromosomes move to one side of the cell and the other twenty-four move to the opposite side. The cytoplasm and cell membrane divide in the usual manner and from each immature spermatozoon or ovum come two cells with twenty-four chromosomes each. This form of division never occurs in any other cells in the body and is reserved entirely for the sex cells."

"If half of the baby comes from the father and half from the mother," interrupted Marion, "why doesn't

# "When I was a baby it happened to me...

# NOW IT'S HAPPENING TO MY BABIES!"

"**I wonder** if there are many families like ours," writes Mrs. Basil Robinson, of Rochester, New York. "Not only was I raised on Clapp's myself—when Clapp's were the first baby foods ever made—but now I've got *two* Clapp-fed babies of my own!" And she continues . . .

"**Douggie was just** 3 years old when these pictures were taken, and Linda was 22 months. I'd just taken them to the doctor and heard the happy report that they just *couldn't* be healthier!

"**As a matter of fact,** neither one has ever been sick. (Maybe I should knock on wood when I say that!) They're both terribly active, and into everything. Sometimes it's all I can do to keep up with them!

"**When Douggie was** ready to start strained foods, I didn't have a minute's doubt about what brand to get. For Mother had always let me know that *I* was a Clapp-fed baby—and my babies were just bound to be Clapp-fed babies too!

"**Linda has pretty much** followed Douggie's stages of development all along. She weighed 6 lbs. at birth, while he'd weighed 7 lbs. 11½ oz. But for the past year she's always weighed exactly 2 lbs. less than he has, and has been exactly 2 inches shorter.

"**Both of them** have enormous appetites—and they've always loved their Clapp's foods. I'm sure their nourishing, well-balanced diet has done a lot to make them such healthy, happy children. So you can see why I'm so loyal to Clapp's!"

## Why your baby will thrive on Clapp's:

Ever since Clapp's *originated* baby foods 25 years ago, we've made all our foods to fill doctors' requirements.

- We've constantly improved our formulas, added new foods, according to doctors' suggestions. Now we offer *"the world's largest baby menu."*
- We discard many fruits and vegetables that would be perfectly acceptable for adults, but not, in our judgment, for Clapp-fed babies.
- All our foods are *pressure-cooked*—to help retain vitamins and minerals, fresh color and flavor.
- We have seen two generations of babies raised on Clapp's. Our business, we believe, is the most important business in the world. It is our *sole* business, not a side line.

- Perhaps this is why so many doctors prescribe Clapp's regularly.

*This is the 25th Anniversary of*

# CLAPP'S BABY FOODS

*—the first baby foods*

PRODUCTS OF AMERICAN HOME FOODS, INC.

Styled for Baby's Comfort In Any Season.

The new extra-light-weight by Hartman with the famous "Floating Ride"—Windowed cowl curtain. . Roomier

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"PLAKIES" Are Back Again!

AN original Plakie Toy that has enjoyed phenomenal popularity. Fourteen bright, beautifully colored plastic discs jingle musically as they slide this way and that on their glistening, rust-proof chain. This toy holds intense interest for tiny tots and older children, as well. The chain withstands a 35-pound pull, and the discs may be sanitized in boiling water.

AT LEADING STORES AND SHOPS EVERYWHERE

PLAKIE BABY TOYS

PLAKIE TOYS, INC. Youngstown, 1, Ohio


every baby look like both its father and mother?"

"All children resemble their parents, grandparents or great grandparents or an ancestor to a certain degree. Inheritance is determined by the tiny genes within the chromosomes of each egg and spermatozoon. Genes are so small that few people have seen them but they are very real. Each gene regulates the growth of some specific part of the body. For instance, in the development of hair there is a gene that determines color, another texture, another whether it will be straight or curly, another the length, another how heavy and so on almost endlessly.

"There is one complete set of genes for the determination of each of these characteristics in the twenty-four chromosomes of every spermatozoon and of every egg. After fertilization there are two complete sets, one of which came from the father and one from the mother. The genes pair themselves off so that the two which are capable of controlling the same features are found together, the two controlling eye color and the two controlling hair color and so on. Nearly always one gene is stronger than the other, and the stronger gene wins. The gene capable of producing brown eyes, for instance, is stronger than the gene for blue eyes. Therefore, if these two genes are found together the baby has brown eyes.

"Occasionally genes are of equal strength and then what they produce will be half way between that which either one was intended to create—a gene from the mother for straight hair and one from the father for curly hair may give the baby hair that is moderately wavy. It is also possible when one gene cannot gain the upper hand, that the two may combine and produce something entirely different from that which either was destined to make, and that is why some children do not resemble either parent."

"Are these genes only in the cells destined to become the new baby?" asked Marion.

"No," answered Dorothy. "They are present in cells at all times. A cell on the sole of the foot has as strong a determiner in it saying that the hair shall be black or eyes brown or nose snubbed as do cells in the hair and eyes and nose.

"However, it is time we moved on now, for if we become too involved in discussing heredity it will continue into the night and we have other ground to cover."

"There is one more thing I want to know," interrupted Marion. "If all of the characteristics little Hiram will ever have are already determined, what good am I doing by reading the classics and going to concerts in order to give him a good mind?"

"Nothing you do now will in any way affect him as far as improving his mentality is concerned. In fact, there is little you can do to affect him in any way. If you were to have a bad fall and injure your abdomen you might have a miscarriage, or if you


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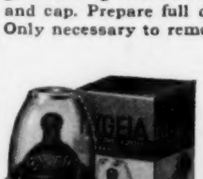

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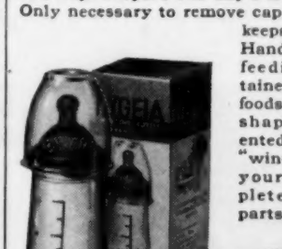

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were ill or undernourished it might harm him. Also, if you were a morphine addict part of the morphine you took would go to your child and he would have all of the symptoms of an addict at the time of his birth.

"Barring things like this, however, which by influencing your own health have an effect on the baby, little you do now can influence the course of his development."

Marion still was not quite satisfied. "What about babies that have birth marks and are deformed? What did their mothers do to make them that way? Grandmother always said that she had a bad shock while she was pregnant and it was responsible for the little strawberry mark on mother's neck."

"That is not true," answered Dorothy. "It is impossible for a mother to mark a baby in any way or to make it malformed."

"Then it seems to me," said Marion, "that I have been doing some unnecessary worrying and spending unnecessary time cultivating my mind. If I eat the proper foods, and keep myself in good physical condition, there isn't much more I can do, is there? Or perhaps I don't even need to do that if the baby cannot be affected?"

"Yes, you must do that, but it is all you need to be concerned about. The baby derives everything necessary for his growth from your body and you need plenty of the right kind of food and exercise in order to fulfil his growing demands. So don't let up on the program you have set for yourself.

"But let us go back again to the time when the male cell and the female cell met in the fallopian tube and joined forces to become a single new unit. You remember that when spermatozoa meet an ovum in the upper end of the fallopian tube within a few hours of the time it has left the ovary, many attack it but only one can be successful and penetrate the wall. When the head of the sperm cell is inside, the tail is dropped off outside and is left behind. The membrane around the nucleus of the ovum and around the head of the sperm cell disappear, all of the chromosomes come together in the center of the ovum and then a new nuclear membrane is produced enclosing all forty-eight chromosomes. Cell division then begins by the ordinary method of splitting the chromosomes and the development of the baby is underway. From then on, as long as growth continues or whenever the body needs to replace worn out cells, the new ones are produced in the same way. The cells divide, they grow and each becomes the size of its parent cell, then they in turn divide, grow, and so on."

"How do you know it happens that way?" asked John. "Has anybody ever seen it?"

"Yes, many times," answered Dorothy. "It is a simple matter to watch plant cells divide. I recently saw a remarkable movie, too, that was taken through a microscope


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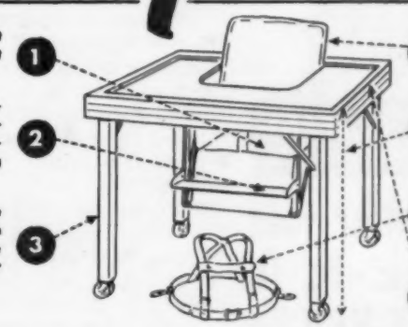

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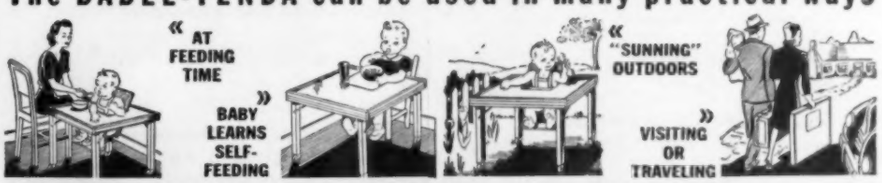


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showing a rabbit egg being penetrated by a rabbit spermatozoon and undergoing subsequent cell division. The spermatozoon broke up into minute particles which became indistinguishable from those of the ovum. One could see all of the tiny particles of the ovum moving actively but apparently aimlessly about. Then as you watched, right before your eyes, the cell wall constricted and two new cells were suddenly formed. We watched a bit further and then each of these divided. It was a strange sensation to see the earliest beginning of a new living creature. This ovum was not inside the body of the rabbit and development could not continue beyond the initial stages, but the process was identical with that which does produce a new rabbit when the ovum is fertilized where it belongs.

"But to get back to human development. While the first cell divisions are taking place the ovum is moving slowly down through the fallopian tube. It takes three or four days for it to reach the cavity of the uterus and by this time it has developed into a small solid ball made up of several dozens of cells.

"For another four or five days it gradually moves across the inner wall of the uterus and nine or ten days after fertilization it usually comes to rest some place on the upper part of the back wall of the uterus. It sinks down into a thick lining that has been formed in special preparation for its arrival, and sinks in just below the surface.

"During the few days that it is in the uterine cavity before it arrives at its final resting place, several changes occur. The cells which were originally in a solid mass become rearranged to form a hollow sphere that is filled with fluid. Outer wall of the sphere is composed of a single layer of cells except in one small part where a small solid mass remains.

"Two secondary cavities are soon formed within this small solid mass in the wall. Each of these new little cavities is shaped like an old fashioned gumdrop with the round flat surfaces facing each other. Three layers of cells are present between these two cavities and it is from these three layers of cells that our baby will eventually be formed. The wall of the big cavity and the domelike part of one of the little cavities will eventually develop into the placenta, which is the so-called 'afterbirth,' and the amniotic sac, generally called the 'bag of waters.' These are essential to the welfare of the baby before birth but are of no use to it afterward.

"At the same time that the large cavity and the two smaller ones are being produced on the inside of this original ball of cells, changes are also taking place on the outside. In small dotlike areas over the entire surface the cells are dividing more rapidly than in intervening areas and small projections which look like little buds extend outward in all directions.

"This is how the developing ovum looks when it sinks down into the cushion-like inner surface of the uterus. There it will become attached and remain until it has grown into a baby capable of undertaking an existence independent of its mother's body.

"And now, my good friends, I think we will leave the infant for the time being."

"It has been wonderful, Dorothy," said Marion, and John echoed her. "If I had known it could be intelligible and sound like a story book I would have insisted that you entertain us long before this. I, somehow, always had an idea that only the select few could understand such things, but as you explain it, I don't see why every one doesn't become interested."

"Perhaps they will," said Dorothy. "At present there is little or no common ground between the embryologists, as the people who make a study of life before birth are called, and the general public. Although every doctor has a general idea of the process, few attempt to remember the details for they aren't often called on to do so. The people who are specializing in the field have apparently not felt a demand for popularizing their knowledge.

"With the increasing birth rate and a general awareness of the fundamental values of life as a result of disturbed world conditions, additional interest in the process of reproduction is certain to occur. We have advanced a great deal. In our grandmother's day one did not talk about having babies except behind closed doors and then usually in whispers. We have a much saner view and we are almost as free to talk today about the baby before it is born as after it has arrived."

"John doesn't quite agree with you, Dorothy," said Marion. "He still thinks I am not very ladylike to talk about little Hiram before others. Perhaps you could convince him that it is all right."

"I'm not going to try now. I am practically walking in my sleep, so goodbye for the time being. Let me know when your curiosity gets the better of you again—good night."

"Good night and thanks heaps. It has been wonderful."

John turned to Marion after Dorothy had left. "Gosh, what a mind. Explained it all without batting an eye practically as if she were reading it out of a book."

Marion reached up and put her arms around his neck. "Wouldn't you like to have a brilliant woman for a wife?"

"I have a brilliant woman! And one who can cook and keep house and have a baby! That is enough for me. And by the way, let's have waffles tomorrow morning, my knowledge-thirsty spouse. I need to be well fortified in preparation for Dorothy's second lesson on the miracle of living."

---

The next instalment of "Pregnancy" will be carried in the September issue of HYGEIA.

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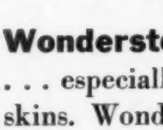

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## Ultraviolet Light

*(Continued from page 595)*

from 300 to 365 millimicrons delay dark adaption and impair visual functions were obtained as follows:

First, the chicks were exposed for an hour to ultraviolet light emitted by quartz mercury vapor lamps. Severe exterior pathological conditions were observed. The lights were then switched off. After sixty minutes in complete darkness the chicks' eyes, if unexposed, would have been completely adapted to darkness, and their visual functions normal.

For testing their vision, each chick was placed in a glass jar surrounded by a glass cylinder bearing alternate transparent and opaque vertical stripes. The stripe system moved at a given rate and produced a flicker to which the chick responded by jerky head motions. The experiment determined the intensity of light needed for flicker recognition.

In comparison with unexposed chicks, the test chicks, due to ultraviolet injuries, required forty-five times as much light to recognize the flickering stripes. It took three days for their eyes to return to normal.

By shielding the ultraviolet lamps with protective glass filters that eliminate the invisible ultraviolet light at about 365 millimicrons and below, it was discovered that the eyes of chicks exposed to the filtered light functioned normally.

The lamps were then shielded with a series of less efficient glass filters that cut out shorter ultraviolet radiations. Repeated experiments with these filters revealed that ultraviolet below about 365 millimicrons impaired visual functions in varying degrees.

The conclusion was that high intensities of these rays are detrimental, and should be excluded from human eyes to prevent impairment of night vision. Fortunately, optical scientists have already developed protective lenses which absorb the rays. Fitted into welding goggles, welding helmets and sun glasses, these lenses provide maximum eye protection for those exposed to ultraviolet.

## SCHOOLING FOR EPILEPTICS

A large number of children in many states are denied public schooling because of epilepsy. This exclusion from school and from normal contacts with other children often burdens them with serious educational and psychologic handicaps.

It is hoped that a study now being made in New York City will enable the board of education to standardize its policy with respect to keeping epileptic children in and returning them to classrooms. Such a program might be adaptable to other states, according to the publication of the National Association to Control Epilepsy, Inc.

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J. E. LIMEBURNER CO.
Philadelphia
BENDER & OFF
BONCHUR & HOLMES, INC. (2 Stores)
A. W. BRAEUNINGER, INC.
JOSEPH F. CLEARY
WINFIELD DONAT CO. (2 Stores)
DOYLE & BOWERS
JOSEPH C. FERGUSON JR., INC.
KEENE & CO.
J. E. LIMEBURNER CO. (2 Stores)
RALPH H. MACMURTRIE
MAWSON & KIENLE
FRANK A. MORRISON
MULLEN & WOLF
MULLER & FENTON
WILLIAM J. SCOTT, INC.
WILLIAM S. REILLY
THE WM. F. REIMOND CO.
SIGISMUND
STREET, LINDER & PROPERT
WALL & OCHS (3 Stores)
WELSH & DAVIS
WILLIAMS, BROWN & EARLE, INC.
JOSEPH ZENTMAYER
Pittsburgh
DAVIDSON & CO.
DUNN-SCOTT CO.
B. K. ELLIOTT CO.
GEO. W. HAAS, INC.
F. J. MALONEY
OSCAR P. MATOUS, OPTICIAN
CHARLES F. O'HANLON
SHALER & CRAWFORD, INC.
GEO. B. REED & CO.
HOMER J. SABISH, OPTICIAN
Upper Darby
J. E. LIMEBURNER CO.
West Chester
WINFIELD DONAT CO.
Wilkinsburg
DAVIDSON & CO.

**NORTH CAROLINA**
Fayetteville
McBRYDE'S—OPTICIANS

**VIRGINIA**
Lynchburg
BUCKINGHAM & FLIPPIN
A. G. JEFFERSON
Newport News
WHITE OPTICAL CO.
Norfolk
E. E. BURHANS OPTICAL CO., INC.
SMITH & JOHNSON OPTICAL CO., INC.
Portsmouth
JOHNSON OPTICAL CO.

**WASHINGTON**
Seattle
CHARLES R. OLMSTEAD
WESTERN OPTICAL DISPENSARY
Yakima
PHYSICIANS OPTICAL CO.

**WEST VIRGINIA**
Charleston
S. A. AGNEW
Parkersburg
RAWLINGS, OPTICIANS, INC.
Wheeling
RAWLINGS, OPTICIANS, INC.

**CANADA**
Hamilton
W. E. DAVIES
Montreal
R. N. TAYLOR & CO., LTD.
Ottawa, Ontario
O. L. DEROUIN
GEO. H. NELMS
SUTHERLAND & PARKINS
Toronto
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**ASK ANY GUILD OPTICIAN FOR THE NAMES OF EYE PHYSICIANS IN YOUR VICINITY**

Count 1-2-3-4-5-6-7-8-9-10-11
A New Baby Every 11½ Seconds
Our production capacity has been taxed both by this faster birthrate and by the increasing percentage of young mothers demanding modern Evenflo Nursers. It concerns us that popular Evenflo Units are often hard to get. Our factories, though, are working night and day to supply this overwhelming demand.
THE PYRAMID RUBBER CO.
Ravenna, Ohio
Evenflo
Nipple, Bottle, Cap
All-In-One, 25c
Nipple down. Bottle sealed.
Nipple up for feeding.
America's Most Popular Nurser
Baby 1-2-3-4-5-6-7-8-9-10-11 Baby 1-2-3-4-5-6-7-8

NEW... low calorie desserts
in 6 delicious flavors
FOR RESTRICTED DIETS
If you are on a weight-reducing diet, diabetic diet or other low calorie diet, ask your doctor about Dietician GLOW Desserts. Glow contains 7¾ calories per serving . . . Ordinary desserts contain as high as 80 calories. 6 flavor assortment 25c. Large size — 20 servings 75c. At Marshall Field, Macy, Hudson, May, John Wanamaker and other department stores.
Dietician BRAND GLOW GELATIN DESSERTS
DELICIOUS IN TASTE... LOW IN CALORIES


## Blood Will Tell

*(Continued from page 575)*

do would help the boy. The doctor felt he couldn't stand by without doing something so he decided on a series of transfusions. He asked for blood donors. The high school basket ball team, of which Jack was a member, turned out to a man. Three of the boys were the right blood type and willingly gave transfusions. But it was useless. He died yesterday.

At this point we can be fairly certain that you have no specific blood disease, but just to make the record one hundred per cent we examine your blood cells directly under the microscope. First we will take a small drop of your blood on a glass slide and use another slide to spread the drop in a thin film. We stain the film with a mixture of aniline dyes to make the cells show up clearly. There are various kinds of white cells, but we can easily tell them apart because different kinds take up different colors from the dye mixture. Your red cells were a nice even pink color, about uniform in size, and pleasantly round in shape. If you had anemia, the cells would vary widely in size, they would be all sorts of funny shapes, and would dye unevenly. You obviously don't have lead poisoning or the red cells would be dusted over with tiny purple granules. A direct examination of the white cells serves as an additional corroboration of the white count because variations in size, shape, staining qualities, and relative numbers of each type of white cells may indicate the existence of some specific disease of the blood itself or provide a clue to the nature and severity of general systemic diseases and the manner in which the body is reacting to the disease.

Now that we've learned all we can from your blood cells, we'll try a different attack. You might be suffering from some poisoning due to prolonged use of coal tar derivatives, nitrobenzol (as in shoe dyes), food preservatives, or certain pain-killers. Perhaps you have been living and working in surroundings where carbon monoxide is present in small amounts: too small to make you feel badly immediately but a sufficient amount to cause chronic poisoning. Policemen and garage mechanics are particularly liable to suffer from carbon monoxide poisoning, but a defective furnace or gas heater may also produce carbon monoxide. By a simple spectroscopic analysis, we can detect any of these chemicals in your blood. A dilute solution of blood in a test tube is held up before a spectroscope in order to intercept the light entering the instrument. Different chemicals present in the blood will absorb different colors from the light and cause a characteristic pattern of light and dark bands to appear. Since the pattern is different for each chemical that combines with hemoglobin, we can easily ascertain if a poisonous chemical is present. A spectroscopic analysis of your blood showed one broad, dark band almost in the middle of the spectrum. That means you don't have to worry about poisons.

While we know there aren't any foreign poisons in your blood, a chemical analysis may show that some normal constituent of the blood is present in abnormal amounts, indicating that your body metabolism is off balance or that some excretory organ is at fault. If we find too much nonprotein nitrogen in the blood, we know your kidneys are not eliminating waste products. Either the kidneys themselves are diseased or are overburdened by certain diseases in other parts of the body. In nephritis and anemia, the amount of salt in the blood is above normal, while in fever or intestinal obstruction the salt is reduced. An estimation of the amount of sugar in the blood is a frequent and important chemical test. If the blood sugar is abnormally high, we begin to suspect diabetes, though occasionally a patient pulls a fast one on us. The other day a 10 year old lad was admitted to the hospital. He came early in the morning, and I tested his blood sugar before he had breakfast. The sugar read unusually high and his doctor was immediately on the alert for diabetes. But strangely enough, subsequent tests showed the blood sugar rapidly returning to normal. The doctor was puzzled for a while and questioned the lad as to what he had eaten the night before he came to the hospital. A little coaxing revealed that he had consumed an entire quart of ice cream all by himself. No wonder he was such a "sweet" little boy the following morning. Aside from these deceptive cases increased blood sugar usually means diabetes. The doctor estimates the severity of the disease and the effectiveness of insulin treatment from the varying sugar estimations.

Over or underactivity of your ductless glands, such as the thyroid, pituitary and adrenal glands, can often be detected by marked changes in certain chemicals in the blood.

There are various complicated chemical tests that may be performed on the blood. Many of them are similar to the sugar test which runs somewhat as follows: The blood is first treated with chemicals to remove certain substances in which we are not interested. It is also treated to produce a clear blue solution that we know contains the sugar. The question is to find out how much sugar. Next we make up a synthetic laboratory solution which contains a known amount of sugar—an amount equal to that found in normal blood. Both solutions are blue, but they will be different shades of blue if one solution is stronger than the other. The two solutions are compared in a colorimeter, an instrument which tells us the quantitative relationship between these two colors; and since

# SCIENTIFIC EYE PROTECTION

It is the *chemical content* of the lenses, and not their color, that assures scientific eye protection in sun glasses. That is the reason sun glasses that lack these properties, no matter what color their lenses may be, can fail to protect a person from annoying and harmful ultraviolet (sunburn) and infrared (heat) rays that strike the eyes.

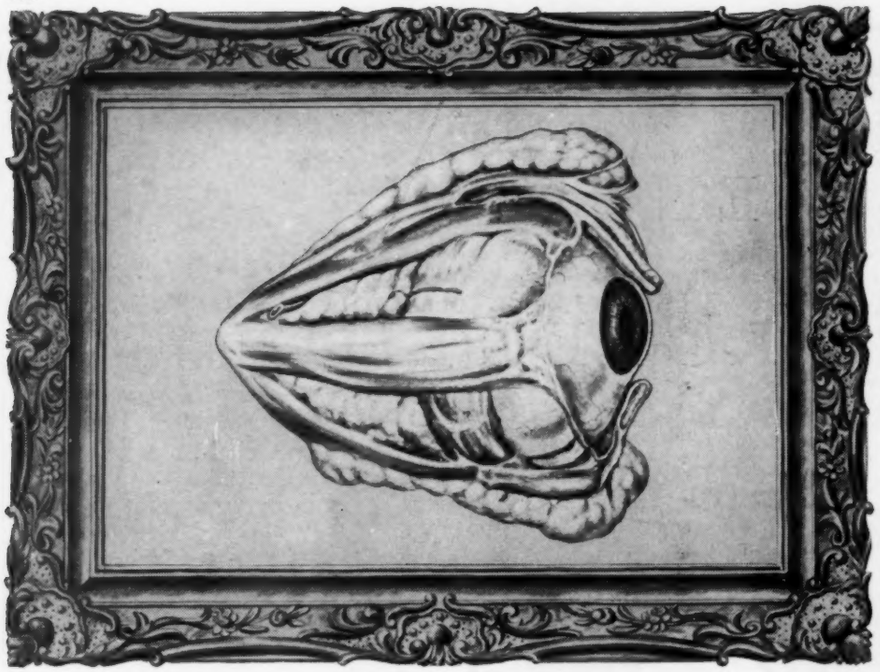
A·O Cool-Ray Sun Glasses assure scientific eye protection from harmful sun rays. Made by American Optical Company, long a pioneer in the science of developing ophthalmic materials, they are scientifically formulated to absorb both ultraviolet and infrared rays, while admitting plenty of "seeing" light. They do not appreciably distort true color values... you see clearly and your eyes remain cool and comfortable.

These sturdy, handsomely designed glasses let you live in the sun sensibly with *scientific eye protection.*

## A·O COOL-RAY
**SUN GLASSES**

# American Optical
COMPANY

*World's Largest Makers of Ophthalmic Materials*



## 30,000 Americans spend their lives studying this picture!

NO ART TREASURE in the great galleries of the world is the subject of more intense and continued study than the picture you see here. No masterpiece requires so much study to be understood. Men spend their lives in probing its complexities.

Through long years of school and unceasingly in actual practice, America's 30,000 eye consultants have kept this and other views of the human eye ever in their minds. They know the strength and weakness of every nerve and membrane, every ligament and muscle, every gland and artery of the entire visual anatomy. Their training enables them to read the eye as clearly as the printed page. *No wonder you can have implicit faith in their recommendations!*

If an examination of your eyes shows that you need bifocals, your eye consultant may prescribe Univis Bifocal Lenses. Out of our 20 years of experience in the development of the exclusive, almost invisible Univis *straight-top* reading segment we (together with thousands of eye consultants) are convinced that it gives a sharper image, a larger field of vision and greater comfort. But whatever lens your eye consultant prescribes for *you,* follow his advice.

*He knows* your eyes!

There are 30,000 eye consultants in America. Choose one of them as the guardian of your vision. Let him examine your eyes at least once every two years.

Straight-Top Segment
UNIVIS

*Life looks brighter through*

**Univis** *Bifocals*
*And Trifocals*

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the depth of color is proportional to the amount of sugar, we can tell whether you have more or less sugar than is normally present in the blood.

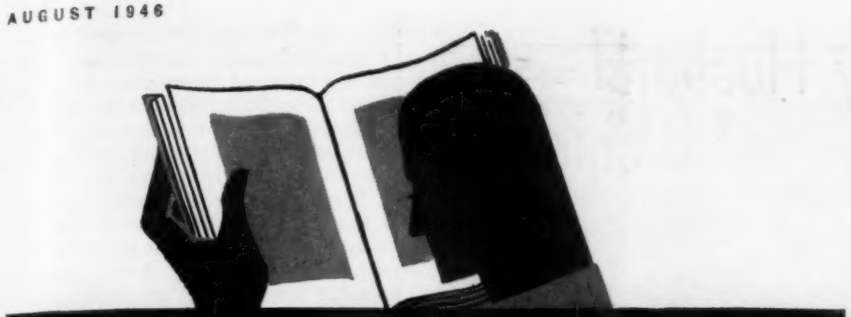
One of these chemical blood tests has given your doctor a clue to your illness. I was in the chart room while he was looking at the report of your laboratory tests, and the unusually high reading on one of these evidently confirmed his clinical diagnosis of your case. Of course, he has already told you that he intends to operate. But if you had hoped to shake me at this point, it was a vain hope. This time I will trouble you for only a small drop of blood from which to estimate your coagulation time. You've noticed that minor cuts on your body don't bleed indefinitely. Chemical changes occur in your blood so that a clot forms and the bleeding stops. But there are some unfortunate people who suffer from a hereditary disease known as hemophilia in which any cut may continue to bleed for several hours. It is exceedingly dangerous to operate on such people. Other patients may have jaundice or anemia in which case the blood has been so altered that it no longer coagulates at a normal rate. Other individuals, while suffering from no specific blood disease, have a long coagulation rate due to some obscure abnormality in their clotting mechanism. They may suffer from prolonged bleeding after as minor an operation as a tonsillectomy. All male babies are tested before circumcision to be sure they will not bleed excessively.

In any of these cases where coagulation is too slow, the doctor can administer a chemical which causes the blood to coagulate rapidly.

There are several methods for determining the coagulation rate. One is to let a small drop of blood run into a fine capillary tube about the diameter of a hat pin. Short sections of the tube are then carefully snapped off at one minute intervals and the broken ends are pulled slowly and gently apart. When the blood has coagulated, a tiny thread of fibrin can be seen stringing out between the separated ends. This thread should appear within two to six minutes. Your blood shows a nice strong thread in three minutes so you've nothing to worry about.

The doctor does not expect you to lose so much blood that you will need a transfusion after the operation, but to be prepared in case of an emergency, we will type your blood to find out in what blood group you belong. Every adult belongs to one of the four major blood groups. A person of one group cannot give blood to a person of another group—except in the movies where we see the hero donating blood to the fair damsel without benefit of a blood test. Actually, such a procedure would be exceedingly dangerous. Blood of a different type would cause your blood cells to form in clumps which would eventually reach the

*(Continued on page 632)*



# BOOKS

## You Can Stay Well

Condensed by Adelle Davis, A.B., M.S. Paper. Pp. 89. Chicago, Illinois: Graphic Arts Research Foundation, 1946. Eighth edition. Price, $1.00.

In its eighth, and first condensed edition, this eighty-nine page brochure presents a hodgepodge of sensible advice on foods, isolated bits of scientific data concerned chiefly with vitamins, and irresponsible statements about successful treatment of conditions with proper vitamin feeding. Emphasis on the importance of an adequate, balanced diet is excellent, but tends to be canceled by statements such as "eating concentrated sugar overstimulates insulin flow which causes the blood sugar to drop below normal and fatigue to increase," that cataracts in human beings often disappear following a diet rich in certain vitamins, that "a severe deficiency of the B vitamin, niacin, results in insanity," and that "experimental tuberculosis has been produced by diets undersupplied in vitamin A."

The "anti-gray-hair vitamins," which have been accorded no scientific recognition are duly recommended, and a generous taking of yogurt (a curdled milk preparation) is advised throughout the booklet. The bland assumption that cancer may be prevented or the growth of "certain types of tumors in humans" retarded by diet hardly helps in view of the present national campaign for earlier recognition of malignancy. Throughout the text the reader is told that a physician should be consulted, but the importance of this is not emphasized. It is to be regretted that the author abandoned discretion in favor of vitamins, for chapters such as those on adequate diet at low cost, modern cooking methods, a normal digestive tract, and the importance of proper nutrition as a general body builder are well presented. An appendix containing, among other items, analyses of two hundred and eighty-seven foods and liquids, a summary of body requirements and calculation of a daily diet is well arranged.

WILLIAM W. BOLTON, M.D.

## Corky the Killer: A Story of Syphilis

By Harry A. Wilmer, M.D. Cloth. Price, $1.00. Pp. 67. New York: American Social Hygiene Association, 1945

The popular appeal of caricature, as demonstrated by the apparently large sale of the comic books, is the basis of this small volume's presentation. It consists of a series of line drawings of "Corky" the spirochete and his travels through and adventures in various parts of the human body. The drawings, that occupy each right-hand page, are cleverly done, and with due allowance for artistic liberty, are reasonably factual. At the top of the opposite page is a semi-humorous narrative explaining the picture in informal language. At the bottom of the left-hand page is a more serious scientific discussion of the same subject material. In all, thirty-two drawings with accompanying text are presented to illustrate the deeds of villainy committed by Corky and his brothers, including their attack on an unborn child. As the book jacket states, the author blends fantasy and fact. It is not easy, and at the same time is unfair to attempt to analyze this blend scientifically. For example, considerable emphasis is placed in the fantasy part of the story on the activities of the white blood cells in fighting the syphilis germ when as a matter of fact they are relatively unimportant in the body's defense against this disease. The original impression is corrected in the scientific discussion. Again, the fantasy part gives the impression that Corky and his pals carry on their invasion of the body from the original site of infection in deliberate fashion. Unfortunately, this is not corrected entirely in the scientific part. In general, however, it may be said that the scientific presentation is excellently done in language that should be understandable to the average reader. It can be presumed that the fantasy in prose and picture will stimulate the reader to consult the factual material, and on that basis this approach to health education can be considered a helpful contribution.

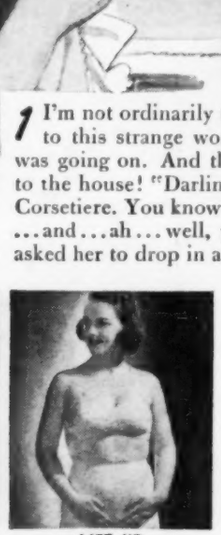
W. W. B.

"And to my cousin Joseph I leave the five dollars he saved me by assuring me the doctor wasn't necessary."

# I caught my Husband talking to a Strange Woman!

1 I'm not ordinarily the jealous type, but when I saw Joe talking to this strange woman so earnestly I began to wonder what was going on. And then bless me if he didn't bring her right into the house! "Darling" he said, "this is Mrs. Adams, the Spirella Corsetiere. You know Mary Brown said she did her so much good ...and...ah... well, you've been so tired and blue lately I just asked her to drop in and see what she could do for you!"

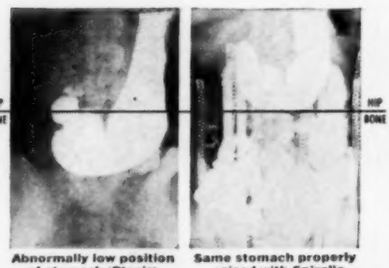
PRESS DOWN



LIFT UP

2 She showed me the Spirella Press and Lift Test the very first thing. I pressed down on my stomach. Ouch! It felt like the ordinary corset. Then I lifted. What a relief! "That's how Spirella supports you naturally," she said. "And you'll look and feel lots younger!"

3 "You see, Spirella lifts instead of squeezes," she went on. "And here are some new doctor-approved X-Ray pictures that show Spirella supports you inside as well as out." Then I knew a Spirella was what I'd been needing.




Abnormally low position of stomach (Ptosis)

Same stomach properly raised with Spirella

4 So she adjusted the patented Spirella Modeling Garment on me to get the accurate measurements for my new Spirella. This morning the Spirella Corsetiere came to deliver my new Spirella, made just for me. It fits perfectly! And what a difference it's made already in how I feel and look! John says I'm a different woman already! If *you* feel and look tired and dragged down all the time, maybe you need a Spirella, too!

KEEP FIT AND LOOK TRIM WITH

**Spirella**

INDIVIDUALLY-DESIGNED FIGURE SUPPORT

*P. S.* If we can help by giving you the name of your local Spirella Retailer, write Dept. M-27

*In the U. S.* THE SPIRELLA CO., INC. NIAGARA FALLS, N. Y.

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*(Continued from page 630)*

heart and block circulation. Blood of the wrong type may also cause your cells to hemolyze, or break up, losing their precious hemoglobin into the surrounding plasma. Such effects are frequently fatal.

To discover your blood type, I mix a drop of your blood with blood sera whose type is already known. These sera are purchased from laboratory supply houses and are fully reliable. Now I can look through the microscope and see which blood serum causes your blood corpuscles to form in little clumps. If you should need a transfusion, we will type those of your relatives and friends who are willing to donate a pint of their blood. If they aren't the right type, we may have to call on a professional donor. We have a list of various blood type donors. Many of them are husky college boys who want to make extra money, but some of them are members of service clubs, such as the Knights of Columbus, who donate blood without charge to charity cases.

When we find a donor belonging to your group, we make absolutely sure your bloods will mix. On one microscope slide we mix some of your whole blood with the donor's blood serum (just the fluid part of the blood minus the blood cells). On another slide, we mix your blood serum with the donor's whole blood. If no clumping takes place in either of these mixtures, the transfusion can be safely given. In order to protect you from the danger of contracting syphilis from infected blood, donors are given a Wassermann test prior to the transfusion. As an added precaution, the donor's blood count and hemoglobin are taken to see if he can stand the loss of a pint of blood and to be sure his blood will benefit you.

I won't be bothering you for any more blood this visit, and if I don't see you before you leave the hospital, I know that from now on you will feel that blood tests are not abstract clinical exercises to keep technicians busy but are valuable clues to the state of your health. Now you know just what and how much your "blood will tell."

## The Sun

*(Continued from page 589)*

Although sunburn is common it can be regarded in no other way than a severe injury to the skin. It is sometimes the forerunner of such diseases as piebald skin, tumors of the skin, chronic nontuberculous lesions of the skin and other skin disorders. Infection of the sunburn blisters may lead to impetigo and other infections of the hair follicles and boils.

Sunburn prevention is accomplished by the application of creams, ointments, oils or lotions containing physical or chemical protective substances. These ingredients absorb ultraviolet radiation and although

their action is insufficient to completely prevent the effects of prolonged exposure to the sun, they do materially diminish them. Insoluble pigments put on the face are also helpful in preventing sunburn. Large hats and veils offer protection, especially if the veils are red or black.

Application of an emollient ointment such as 2 per cent benzocaine is usually adequate in the treatment of sunburn. Cold compresses of milk or carron oil or mineral oil are also helpful.

The predisposition of certain types of skin to the development of skin cancer has been established by clinical observation. There is probably no fact regarding the cause of cancer better established beyond question or doubt than that habitual exposure to sunlight causes cancer in certain types of skin under certain conditions. Persons with fair skin are more prone to skin cancer than those with a brunet skin.

Consider the early age at which children mature in the tropics. This illustrates the effect of habitual exposure to sunlight on the cells as their life cycle is apparently speeded up and the exposed skin ages prematurely. Cancer is a disease of old age. But, old age is a biological—not a chronological—fact and all parts of the body do not age uniformly. Some relatively young people have old arteries, whereas others have prematurely old skins. Still other people, in their seventies, have skins which appear youthful.

One third of all skin cancers occur on the nose and this may be due, at least in part, to the large amount of sunlight the nose receives. Cancer of the lower lip can be traced in practically all instances to habitual exposure to sunlight. Smoking plays a questionable part in lip cancer. The incidence of lip cancer among men and the incidence of breast cancer in women, is not as yet explained.

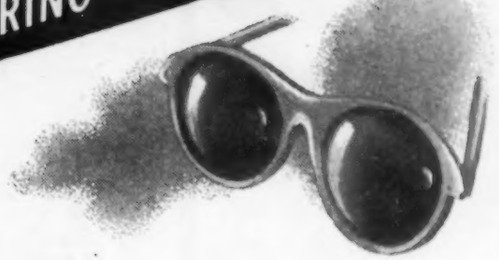
Cancer is a process that occurs under favorable conditions. In the case of skin cancer the conditions which favor its growth are maturity, fair skin and habitual exposure to sunlight. The likelihood of cancer is increased if there are moles, warts or other precancerous lesions present.

General cognizance of the factors which favor the development of malignant growths of the skin will do much to decrease still further the number of deaths from these annually. There are more than three thousands deaths in the United States yearly from skin cancer and most of these are needless.

Preventive treatment for cancer of the skin consists of the avoidance of habitual, excessive exposure to sunlight, especially by persons with fair skins, and early and prophylactic removal of moles, warts, cysts and precancerous lesions.

Sunlight is a friend, if exposure to it is within certain definite limits. But sunlight is just as surely a foe if exposure to it is habitually excessive.


FAITHFUL PERFORMANCE
in
RENDERING TRUE EYE PROTECTION



*Oculens SUN GLASSES

accomplish their prime function of eye-protection with distinguished merit.

They excel the commendable standards for sun glass manufacture set by the U.S. Department of Commerce Bureau of Standards.

Oculens eliminate harmful ultra-violet and infra-red light rays . . . They give clear clean vision and faithful color values.

In addition, Comptone Company has devoted considerable attention to creating attractive modern frame designs. Oculens smart styling gives that psychological lift that means keener better spirits.

For men, women, and children whose vision does not require corrective prescription lenses. Priced from $1.98 to $12.00

COMPTONE Company, Ltd.

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**New Cream Deodorant**

*Safely helps*

**Stop Perspiration**

1. Does not irritate skin. Does not rot dresses and men's shirts.
2. Prevents under-arm odor. Helps stop perspiration safely.
3. A pure, white, antiseptic, stainless vanishing cream.
4. No waiting to dry. Can be used right after shaving.
5. Arrid has been awarded the Approval Seal of the American Institute of Laundering – harmless to fabric. Use Arrid regularly.

ARRID IS THE LARGEST SELLING DEODORANT

**ARRID**

39¢ *plus tax* (Also 59c jars)

AT ANY STORE WHICH SELLS TOILET GOODS

MORE MEN AND WOMEN USE ARRID THAN ANY OTHER DEODORANT

*America's Favorites*

Eddie Egg Sammy Sunfish

**T-Y-K-I-E TOY**

**BOBBING BATH BUDDIES FOR BABY**

The Floating doll teethers with the musical tinkle sounds. Hand Painted as are all "TYKIE TOY" Characters.

PLASTIC *

Sold by leading dealers in Infants Wear

TYKIE TOY

PIQUA, OHIO

*Pat. Pending


# QUESTIONS AND ANSWERS

### Penicillin Has New Use

*To the Editor:*—I recently read in a health column about using penicillin for treatment of bronchiectasis. Is this effective? Are there any specialists whom I could consult regarding this treatment?

Ohio.

*Answer.*—The article dealt with the use of penicillin in what is known as an aerosol spray. This represents a finely divided suspension of penicillin which is breathed by the patient at regular intervals. In this way, the penicillin is brought into contact with the infected areas within the lungs. There appears to have been considerable improvement in some individuals suffering from bronchiectasis and the secondary infection which almost invariably accompanies this condition. This treatment will not actually correct the dilatation already present in the bronchi.

It is our understanding that a special atomizer is available for production of this finely divided spray which is the basis of treatment. No doubt local physicians can obtain these atomizers.

### Asks About Dandruff

*To the Editor:*—I have read that a solution of sulfanilamide rubbed into the scalp twice a day is a good cure for dandruff. Please tell me how to prepare this treatment. Is it safe?

Kentucky.

*Answer.*—We do not believe there is scientific basis for such a treatment. It has never been established that dandruff is due to an infection. It hardly seems conceivable that sulfonamide drugs, which are considered of value only in the presence of infectious processes, would clear up this condition. By the use of such a preparation there is a fairly good possibility that skin sensitization might be developed. This is not an uncommon occurrence when sulfa drugs are used, and often produces extremely severe reactions. We advise you not to employ this treatment.

### Myopia Discussed

*To the Editor:*—For the past seven years I have been wearing glasses for myopia, a condition I have had since the age of 13. I have changed glasses four or five times, and each time the glasses prescribed for me have been considerably stronger. In 1943 I barely managed to pass the eye examination of the naval service. I would like the names of doctors who use eye exercises, diet, etc., in the treatment of myopia.

New Jersey.

*Answer.*—There are no eye exercises or diets that correct myopia, as this condition is due to irregularities in the corneal portion of the eyeball, for which no corrective measures have been developed. Recently there was a report that this can be relieved by an operation, but verification of this is still awaited. As one grows older the irregularities in the cornea become more pronounced, and glasses must therefore be changed. In most individuals the condition becomes stationary after a few years. You should have frequent examinations to determine the condition of your eyes.

### Testosterone and Salt

*To the Editor:*—Is it true that as one gets older he should use less salt?

Of how much value has "testosterone propionate" proved in restoring youth in old men?

Pennsylvania.

*Answer.*—We do not believe there is any scientific basis for the theory that one should eat less salt as one grows older. Salt is an essential part of the human body, and as it is excreted steadily through the kidneys its replacement is necessary.

There is not much scientific evidence that testosterone has proved of value in restoring youth in old men. Administration of a product of the glands of reproduction cannot be expected to build up muscular power or strengthen bones and sinews.

### TB Information

*To the Editor:*—In treating tuberculosis how is the lung reopened after it has been collapsed?

Ohio.

*Answer.*—A lung which has been collapsed by the introduction of air into the chest cavity will re-expand automatically as air is absorbed from the pleural cavity. This expansion does not have to be stimulated by any special process, although occasionally patients who have recovered sufficiently to begin using the lung again are put on exercises involving blowing against resistance.

### Concerning Vitamins

*To the Editor:*—Would you please tell me if vitamins sold in drug stores are what they claim to be?

I feel that my children need vitamins and would like to know the names of some reliable brands.

Idaho.

*Answer.*—If you have sufficient medical understanding to know that your children need vitamins, use of these substances may be considered desirable. You understand that indiscriminate administration of vitamins does little good in most cases. If your children are sick they may be suffering from some condition which vitamins cannot relieve. It would be best to consult your family doctor regarding the advisability of giving your children vitamins.

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# Operation X—Survival

*(Continued from page 581)*

tween "feeling sure" and being certain enough to use so drastic a method on wounded veterans, there stood a large gap. A gap that could only be bridged by a test on large animals. In the kennels of Operation X one can find many "tantalum-plated" dogs whose happy barks and normal actions testify to the successful outcome of these experiments. On Army and Navy discharge lists may be found the names of hundreds of "tantalum-plated" men now returned to a normal civilian life, who would otherwise have faced the constant danger of the degeneration of bone patches, long sessions on the operating table and—in many cases—death. Skull wounds in the last war ended in death in nearly 50 per cent of all cases. Less than 10 per cent died in this war.

It required only eighteen dogs, all operated on under anesthesia, to solve a kidney wound problem that has plagued military and civilian surgeons for generations. The problem centered around the length of time the wounded could survive if the blood flow to their kidneys was impaired or stopped. Twelve dogs were subjected to a stoppage of kidney flow for up to two hours. All survived. But six dogs, subjected to the same stoppage for four hours, died. It was proved that renal ischemia for over three hours is necessary before the danger zone of death is approached.

Within a month, medical units throughout the world were ordered to give special priority to kidney and back wounds; to get these men to surgeons within three hours. The three hour limit allowed for super priorities to cases which might be even more urgent. And thanks to the sacrifice of six animals which would otherwise have been asphyxiated in dog pounds, hundreds of men survived and returned home.

Shock — the respiratory and circulatory collapse following severe wounds or burns—killed thousands during World War I and millions more in civilian life in peacetime. When we entered World War II, plasma and blood tranfusion technics were well developed. But we had no data as to the exact amount of these fluids needed to overcome shock. Too little was fatal. Too much might prove quite as disastrous. Research dogs provided the answer. An accurate knowledge as to the specific quantity of plasma per unit of body weight required to prevent the burned and wounded from falling into shock was revealed.

This one series of experiments provided the basis for the invention of the Navy's phenomenally successful flash burn ointment which saved the lives or the visages of more than twenty thousand seamen seared in battle explosions.

Frequently, half a dozen new technics developed through animal experimentation are combined to save human lives. Typical is the case of John Pierson, forced to leap from the fifth floor of a burning building. He was picked up with a whole catalogue of injuries: a compression fracture of a dorsal vertebra, an impacted fracture of the right tibia, a transverse fracture of the fibula, bilateral compound calcaneus fractures. There was an immediate paralysis from the waist down, including the bowel and bladder functions. One lobe of his lungs had collapsed.

Rushed to a hospital, he was given plasma and blood intravenously, by methods perfected in the hush-hush laboratories. His spinal cord was decompressed and protected with animal membrane—another development speeded to perfection during the war by animal experimentation. Fibrin foam was used to control bleeding—a process that could not have been developed except through the use of test animals. Pierson is alive and walking today.

The full four year list of achievements of the guarded laboratories of Operation X would fill many volumes. The result, in terms of human beings saved, amputations avoided, sanity retained, comes to a tremendous total even if applied only to the sick and wounded of the armed forces. Actually, everything derived from such experimentations serves continuously to save the lives of civilians, in addition to military personnel.

These great gains have been achieved with surprisingly few animals. Each year the seventy specialists of Operation X have used some twenty thousand mice, two thousand five hundred rabbits, one hundred and fifty monkeys, one hundred dogs, forty-five sheep, eleven pigs and one horse. Only a fraction of these animals have been placed on an operating table. More than nine out of ten of the experiments call for no more than inoculation or similar procedures and do not involve surgery. Less than four animals in a hundred are involved in experiments requiring their ultimate death—always under anesthesia—and dissection.

Professionals of the antivivisectionists' lobbies, in their annual drives for laws that would stop animal experimentation, like to paint gaudy word pictures of scientific laboratories. If one were to believe them, hordes of sadistic doctors spend virtually all their time torturing animals for the mere fun of it and with no gain to humanity. Actually, animal experimentation is carried on only under the strictest safeguards. At the Operation X laboratories standing orders, strictly enforced, provide that "No operation can be made except with the sanction of the Director, who is responsible for the propriety of the procedures used in the solution of each laboratory problem." Another order reads, "In all

experiments animals shall first be rendered incapable of perceiving pain and shall remain in this condition until the operation is ended."

Despite such safeguards, and the demonstrated value of animal experimentation, it was found necessary to cloak "Operation X" in the deepest blanket of secrecy. Though thousands of ownerless dogs are executed annually in dog pounds within a short radius of the laboratories, it was necessary to buy dogs secretly. In the midst of war, with the lives of thousands of sick and wounded at stake, officers had to don mufti and canvass dog breeders in the countryside, soliciting the gifts of one dog here and two there.

Many persons who proudly turned their dogs over to the K-9 Corps for front-line duty and probable death, indignantly refused these officers when they appeared in their unmarked black laboratory truck—sometimes to appeal for no more than a sample of dog's blood with which to seek a cure for filariasis, or elephantiasis, the scourge of the South Pacific that more than six thousand of our Marines had contracted.

Only now after the emergency, and even now only timorously, do the services dare to publicize the procedures which formed the basis for so many of its greatest medical victories. They wonder if all the logic in the world can outbalance the false humanitarianism of those who annually besiege our legislatures for laws against vivisection in the belief that it is better to save the life of one dog than the lives of a thousand human beings.

## The No Trouble Child

*(Continued from page 602)*

growth in years. Jean may be 14 years of age, counting in days and months and years but her mental age may be far below that of a 14 year old. Or there may be a subconscious fear of "growing up," a fear of having to face an alien world, for which her solitudinous doll-preparation did not prepare her.

In either case, it would be to Jean's and her mother's advantage to visit a psychologist and gain the benefit of his diagnosis.

To consider it good fortune that a child is too well behaved is harmful to the child. There is a period in the life cycle of a child where too good behavior indicates a deep seated abnormality. Probe the surface and locate the cause. An early examination of the case may mean the difference between a child set on the road that leads to a normal development and one that leads to delinquency! Mental retardation often is detected by a too good behavior on the part of a child. Pay close attention to the no-trouble child!


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## Home Canning

*(Continued from page 591)*

like to know what it takes to provide good eating—here are some principles of good canning. They are approved by scientific research and experience of home canning specialists in the Federal Bureau of Human Nutrition and Home Economics.

First of all, only fresh food is worth canning. The fresher the food, the better looking and better tasting product it makes, and its chances of keeping are better.

There is a home canner's joke about a man who wouldn't pick one vegetable in his garden until his wife called from the kitchen, "Water's boiling now, Tom!" He went a bit far, but he had the right idea.

Ripe, firm fruit and tender young vegetables are right for eating and for home canning. For canning, food must also be perfect. Even if a decayed spot or bruise is removed, bacteria that remain may cause a whole canning pack to spoil.

Speed, under control, counts in good canning. Having equipment ready, preparing just enough food for one canner load, getting the hot, filled jars quickly into the canner save time. And time is food value.

Foods that have acid in them, such as tomatoes and fruits, are safely and easily processed in a boiling water bath canner. This may be just a clean, deep pail or wash boiler fitted with a good lid and a wooden or metal rack that keeps jars off the bottom. To heat food adequately to the innermost part of each jar, the water must bubble and boil around, under and over jars.

Safe canning of common garden vegetables, except tomatoes, requires processing in a steam pressure canner. It takes a temperature much higher than boiling to make bacteria in these nonacid foods harmless, in a practical length of time.

Up to date canning directions, based on the latest findings of science, are as important as the right food and equipment. Free leaflets may be obtained from a state college of agriculture. Federal home canning specialists offer guidance in an illustrated leaflet, "Home Canning of Fruits and Vegetables," that may be obtained free from the Department of Agriculture, Washington 25, D. C.

Home canners are sometimes tempted to piece together directions jigsaw style. Resist that impulse, scientists warn. Processing times are intended to be used when food is prepared and packed exactly as stated. Mixed directions may lead to food waste through spoilage.

What about equipment for this year's canning task? During the war, shortages of supplies and equipment harassed many home canners. Query-

ing prospective canning supply firms resulted in the following report.

The prospect is good for production of both steam pressure and boiling water bath canners. Aluminum is fairly plentiful. The enamelware industry is running well above its prewar production of various items, and should be able to make sufficient water bath canners to meet demands.

Home canners should be able to get all they need of jars and tops, and prewar types are coming back.

No shortage is expected in rubber rings and the quality should be better than in the past few years because somewhat more natural rubber is being used.

Supplies of tin for cans continues to be scarce, and, wherever practical, it is advisable to use glass jars for home canning.

Sugar is the dark spot in the supply picture, for it continues to be scarce. Spare ration stamp Number 9, good for 5 pounds of sugar for home canning may be used through October 31; and this sugar, don't forget, is intended for only home canning. An additional stamp for home canning sugar became available July 1. The total ration for home canning will not be more than 10 pounds per person.

How to stretch sugar has been a problem each war year of home canners eager to put up fruit. By now, limits of what can be done to stretch sugar must be as familiar to most home canners as the table of two times two.

But for new canning recruits, here are the two tried wartime rules for making the most of sweetening:

Average a pound of sugar to four quarts of home canned fruit. This means using about half a cup of sugar to one quart jar of fruit, and results in a moderately thin sirup.

To stretch sugar farther, some light corn sirup or honey may be used. Replace as much as one third of the sugar with corn sirup; or replace as much as half the sugar with honey.

Canning fruit with no sugar is a last resort. The fruit will not spoil, it is true. Fruit is often canned in this way for patients on sugarless diets. But any homemaker who tries it should understand at the start that sugarless fruit will not have the flavor, color, and texture that she expects from her standards of good canning. Yet when fruit on hand would otherwise go to waste it is worth a homemaker's while to can it with no sugar.

Canning food in a community canning center is sometimes overlooked by people who want to can but lack equipment, or who would like to have help. At these centers equipment and the opportunity to work under supervision are provided.

Community canning centers have special work to do this summer in the nation's food conservation drive. Calling on community leaders throughout the country, the National Garden Conference urged them to—

"Mobilize the community for preservation of food for school lunches and charitable institutions by making the greatest use of school and institution gardens, seasonal abundances, and surplus from home gardens and orchards . . .

"Enlist volunteers to donate time and materials for canning food for relief shipment abroad by UNRRA and other agencies, wherever facilities are available for canning in tin and adequate supervision is assured."

Any one in doubt as to where the nearest community canning center is located can ask the extension service representative or State Department of Education at the State Capital, or the local Red Cross chapter or nutrition committee.

When talking of how Americans preserve food in a war of famine, home canning is the main topic. The reason—canning is the leading way in which families in the United States preserve food. Almost every family that preserves food includes canning.

However, freezing, dehydration, storing, brining, pickling are all home food preservation possibilities. Each has special points in its favor besides providing variety.

Freezing is a particularly good way to preserve food for families able to rent space in a frozen food locker and those that have a home freezer and storage cabinet. When properly packaged and stored under correct conditions, frozen foods hold their natural color, flavor and nutritive value to a high degree.

To the family looking forward to trying this method, research specialists stress the same advice as they do for good canning: Be sure to use directions based on latest scientific research, whether the food is prepared for freezing at home or at a community plant. Just off the press this summer is the Department of Agriculture's new leaflet, "Home Freezing of Fruits and Vegetables," which, like its canning leaflet, may be obtained without cost.

Whatever method you use in home food preservation, keep these facts in mind. Select the method in advance, take an inventory of the equipment needed, follow reliable instructions, and allot your time so that the canning process need not be interrupted or postponed.

If the work should become a little tiresome, just remember—for each jar of food that you preserve, you buy less and some little starving child in Europe says, "Thank you."

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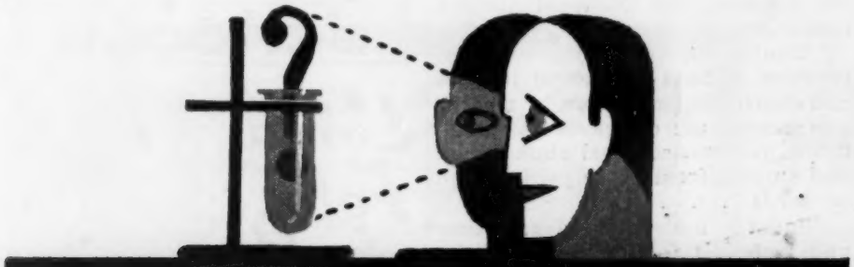

# HEALTH in the headlines

By KATHLEEN SIMMONS

### MULTIPLE BIRTHS

Oddly enough, there are more triplets and quadruplets born in the United States than in Canada, though more twin births are recorded in Canada. At least, so says the Statistical Bulletin of the Metropolitan Life Insurance Company, which should certainly know. Their figures prove that for every million confinements, over 11,000 sets of twins are born in Canada, compared with 10,600 in the U. S. But in the U. S. there are 110 triple births in a million, compared to 80 in a million in Canada.

During the five year period studied (1939 to 1943) no quadruplets were born in Canada, but 23 cases were reported in the United States—two in every million confinements. (This period, luckily, eliminates the quintuplets. They would have ruined the figures.) The United States' lead in triple and quadruple births is maintained because of the high proportion of these births among Negroes. Incidence of quadruplets in Negro families was 7 per million confinements, compared with 1 per million among white mothers. This is offset somewhat by the large number of stillbirths among Negro infants—at least twice as many as among Canadian and American white babies.

### BLACK MARKET DRUGS

The European black market isn't confined to foodstuffs and cigarettes. Most scarce necessities of life find their way into the pockets of the black marketeers. Therapeutic drugs, for instance, are being distributed at scandalous prices to people in need, according to a report from the *Journal of the American Medical Association's* Italian correspondent. American drugs are now scanty, and, while some Italian pharmaceutic houses are planning to market their products soon, the domestic drug supply is still extremely low. During the occupation the Allies provided drugs to hospitals, university clinics and big city pharmacies, but after this source dried up, the black market stepped in. Hospitals and clinics may still obtain 100,000 units of penicillin for 500 lire, but it costs a private purchaser from 5,000 to 8,000 lire in the black market. Conditions seem to be improving somewhat, however, says the correspondent, for a 100,000 unit bottle, that would have cost 12,000 lire (black market rate) in Milan or Turin a few months ago, may now be purchased for 6,000 lire. When insulin supplies are low, the black market price may vary from 300 to 1,000 lire for 200 units—though the price in diabetic clinics is 60 lire.

### RELIEF FOR MOTORISTS

Motorists may be interested in a note recently published by *The Journal of the American Medical Association* from Dr. Amy Weiss of Chicago. Dr. Weiss suggested that perhaps the eye fatigue complained of by long distance drivers may be due in part to the solid black highway dividing lines which they must follow while driving. As a substitute for the solid line, she proposed several possible modifications—a zigzag line, a line composed of alternate black and white rectangles or of adjoining triangles or circles, for instance. *The Journal,* however, questioned the influence of extraneous factors on eye fatigue and pointed out that the driver's ocular muscle balance probably plays a greater role in fatigue.

### ONE-EYED WORKERS

One-eyed people may be divided into two classes—those who have been blind in one eye from childhood and those who have lost an eye after reaching maturity. The former labor under no handicap—they actually see and work as well as people with two good eyes. The latter, too, may (and practically always do) become as efficient with one good eye as with two, though it takes them a while to adjust to "monocular" vision. First they have trouble in estimating distance. Dr. J. Minton, in *The British Journal of Ophthalmology* has observed that they miss the cup when pouring tea, and may knock cigaret ashes on the floor, rather than into the ashtray. These judgment mistakes are gradually overcome, usually in a few weeks. Employers find that one-eyed people are just as efficient in their work as two-eyed people, once they have learned to make proper use of their one good eye. They are fit for almost any job, but should not be placed in a position where there is eye hazard—as, for instance, clipping, hammering or drilling metal, or working underground in mines. The remaining good eye must be safeguarded at all costs.

### SAFETY STAMPS

You need have no more worries, as you lick a postage stamp, about the number of lethal bacteria you may be ingesting. A doctor, who recently became interested in the matter, made a number of tests and then reported to the *Virginia Medical Monthly* that the postage stamp is innocent of ability to transmit disease.

### NEW MEDICS

There are now 1,892 more doctors in the United States than there were in December 1944. This wasn't hard to figure out when we found (or, rather, the Council on Medical Education and Hospitals of the American Medical Association found) that 5,707 young men became licensed medical and surgical practitioners during 1945 and that during the same period 3,815 doctors died. The state of California issued the largest number of licenses (1,208) and Indiana University School of Medicine graduated the largest number of physicians (228).

### LEUKEMIA AND X-RAYS

Constant exposure to x-radiation may be a factor in the development of leukemia. So, at least, says *The New England Journal of Medicine* in an article describing the results of a study of the 34,626 obituary notices which appeared in *The Journal of the American Medical Association* during the past ten years. Dr. H. Ulrich, author of the article, found that the incidence of death from leukemia (a generally fatal disease in which the number of immature white blood cells increases abnormally) among radiologists was 3.9 per cent—more than eight times as great as the incidence among physicians who were not radiologists. Radiologists, of course, specialize in taking and studying x-ray photographs. The study cannot be considered completely accurate, since many of the obituaries did not list cause of death and others gave no indication of possible x-ray exposure, but the figures still offer a tentative answer to a question which has bothered scientists for a long time.